RS&H

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Ted Stevens Anchorage International Airport
Master Plan Update
Chapter 5 – Alternatives

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Preface

The Ted Stevens Anchorage International Airport (Airport) Master Plan Update (Master Plan Update) provides Airport management and the Alaska Department of Transportation & Public Facilities (DOT&PF) with a strategy to develop the Ted Stevens Anchorage International Airport. The intent of the Master Plan Update is to provide guidance that will enable Airport management to strategically position the Airport for the future by maximizing operational efficiency and business effectiveness, as well as by maximizing property availability for aeronautical development through efficient planning. While long-term development is considered in master planning efforts, the typical planning horizon for the Master Plan Update is 20 years.

The Federal Aviation Administration provides guidance for Master Plan development in FAA Advisory Circular 150 / 5070-6B, *Airport Master Plans*. Although not required, the Advisory Circular strongly recommends airports prepare a Master Plan. Funding for the Master Plan Update is provided primarily by the Federal Aviation Administration through an Airport Improvement Program grant.

A comprehensive Master Plan Update was last prepared between 2012 and 2014. This Master Plan Update was initiated in December 2021 and is anticipated to conclude in 2025. The DOT&PF entered into a contract with the firm RS&H to lead this effort. The Master Plan Update included a comprehensive public and stakeholder involvement program.

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Acronyms and Abbreviations

AAAC	Airport Airline Affairs Committee
AAC	Aircraft Approach Category or Alaska Administrative Code
AACC	Anchorage Airport Communications Committee
AAD	Annual Average Day
AADT	Annual Average Daily Traffic
AAGR	Average Annual Growth Rate
AC	Advisory Circular
ACHP	Advisory Council on Historic Preservation
ACMI	Aircraft, Crew, Maintenance, and Insurance
ACMP	Anchorage Coastal Management Plan
ACRP	Airport Cooperative Research Program
ADAPT	Annual Delay and Activity Performance Times
ADEC	Alaska Department of Environmental Conservation
ADF	Aircraft Deicing Fluid
ADF&G	Alaska Department of Fish and Game
ADG	Airplane Design Group
ADNR, OHA	Alaska Department of Natural Resources, Office of History and Archaeology
ADOLWD	Alaska Department of Labor and Workforce Development
AEDC	Alaska Economic Development Corporation
AFSC	Anchorage Fueling and Service Company
AGL	Above Ground Line
AHPA	Alaska Historic Preservation Act
AHRS	Alaska Heritage Resource Survey
AIAS	Alaska International Airport System
AIDEA	Alaska Industrial Development and Export Authority
AIP	Airport Improvement Program
Airport	Ted Stevens Anchorage International Airport
AIT	Advanced Imaging Technology
AMATS	Anchorage Metropolitan Area Transportation Study
ANGB	Air National Guard Base
AOA	Air Operations Area
APDES	Alaska Pollutant Discharge Elimination System
APU	Auxiliary Power Units
ARC	Airport Reference Code
ARFF	Aircraft Rescue and Fire Fighting
AS	Alaska Statute
ASDA	Accelerate-Stop Distance Available
ASDE	Airport Surface Detection Equipment

ASIG	Aircraft Service International Group
ASPM	Aviation System Performance Metrics
ASR	Airport Surveillance Radar
ATCT	Airport Traffic Control Tower
AWMP	Anchorage Wetlands Management Plan
AWWU	Anchorage Water and Wastewater Utility
BAT	Best Available Technology
BGEPA	Bald and Golden Eagle Protection Act
BMPs	Best Management Practices
BRAC	Base Realignment and Closure
BRL	Building Restriction Line
CAA	Clean Air Act
CAD	Computer-aided Design
CATS	Compliance Activity Tracking System
CBIS	Checked Baggage Inspection System
CBP	Customs and Border Protection
CBRA	Checked Baggage Resolution Area
CCSF	Certified Cargo Screening Facility
CDS	Consolidated De-Icing Services
CERCLIS	Comprehensive Environmental Response, Compensation, and Liability Information System
CESQG	Conditionally Exempt Small Quantity Generator
CFC	Customer Facility Charge
CFR	Code of Federal Regulations, or Crash / Fire / Rescue
CIP	Capital Improvement Plan
CO	Carbon Monoxide
Coastal Trail	Tony Knowles Coastal Trail
COD	Chemical Oxygen Demand
CONRAC	Consolidated Rental Car Facility
CUPPS	Common Use Passenger Processing Systems
CZMA	Coastal Zone Management Act
DHS	Department of Homeland Security
DME	Distance Measuring Equipment
DNL	Day-night Average Sound Level
DO	Dissolved Oxygen
DOT	U.S. Department of Transportation
DOT&PF	Alaska Department of Transportation and Public Facilities
EAS	Essential Air Service
EDS	Explosive Detection System

EMS	Environmental Management System
EOC	Emergency Operations Center
EQA	Equivalent Aircraft
ETD	Explosive Trace Detection
FAA	Federal Aviation Administration
FAR	Federal Aviation Regulation
FBO	Fixed Base Operator
FCC	Federal Communications Commission
FEMA	Federal Emergency Management Agency
FIRMs	Flood Insurance Rate Maps
FIS	Federal Inspection Service
FMRA	FAA Modernization and Reform Act of 2012
FY	Fiscal Year
GA	General Aviation
GPS	Global Positioning System
GRE	Ground Run-Up Enclosure
GSE	Ground Service Equipment
HLB	Heritage Land Bank
IAS	International Aviation Services, Inc.
IATA	International Air Transport Association
IBC	International Building Code
IFR	Instrument Flight Rules
IFT	International Freight Terminal
ILS	Instrument Landing System
INM	Integrated Noise Model
ISER	Institute of Social and Economic Research (at the University of Alaska Anchorage)
JBER	Joint Base Elmendorf-Richardson
LDA	Landing Distance Available
LOC	Localizer
LOS	Level of Service
LUST	Leaking Underground Storage Tank
MOA	Municipality of Anchorage
MSA	Metropolitan Statistical Area
MSGP	Multi-Sector General Permit
MSL	Mean Sea Level
MTOW	Maximum Takeoff Weight
NAAQS	National Ambient Air Quality Standards
NAC	Northern Air Cargo
NADP	Noise Abatement Departure Profiles

NAMS	Northern Air Maintenance Services
NAVAID	Navigational Aid
NCP	Noise Compatibility Program
NDB	Non-directional Beacon
NEMs	Noise Exposure Maps
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NOAA	National Oceanic and Atmospheric Administration
NPDES	National Pollutant Discharge Elimination System
NPIAS	National Plan of Integrated Airport System
NPL	National Priorities List
NRHP	National Register of Historic Places
O&D	Origin and Destination
O&M	Operations and Maintenance
OAIASS	Optimize AIAS Strategy
OER	Operating Expense Ratio
OFA	Object Free Area
OFZ	Obstacle Free Zone
OSR	On-Screen Resolution
PAL	Planning Activity Level
PAPI	Precision Approach Path Indicator
PCC	Portland Cement Concrete
PCI	Pavement Condition Index
PDARS	Performance Data Analysis and Reporting System
PFAS	Per- and Polyfluoroalkyl Substances
PFC	Passenger Facility Charges
PM-10	Particulate Matter with a Diameter of 10 Microns or Less
PM-2.5	Particulate Matter with a Diameter of 2.5 Microns or Less
QTF	Quick-Turnaround Facility
RCRA	Resource Conservation and Recovery Act
RDC	Runway Design Code
RNAV	Area Navigation
ROFA	Runway Object Free Area
RON	Remain Overnight
RPZ	Runway Protection Zone
RSA	Runway Safety Area
RSIP	Residential Sound Insulation Program
RTR	Remote Transmitter Receiver
SCS	Sterile Corridor System

SHPO	State Historic Preservation Office(r)
SIDA	Security Identification Display Area
SIP	State Implementation Plan
SSCP	Security Screening Checkpoint
STEP	South Terminal Expansion Project
SWPPP	Stormwater Pollution Prevention Plan
TACAN	Tactical Air Navigation
TDG	Taxiway Design Group
TERPS	Terminal Instrument Procedures
TODA	Takeoff Distance Available
TORA	Takeoff Run Available
TRACON	Terminal Radar Approach Control
TSA	Transportation Security Administration
UPS	United Parcel Service
USDA-WS	U.S. Department of Agriculture - Wildlife Services
USEPA	U.S. Environmental Protection Agency
USFWS	U.S. Fish and Wildlife Service USPS United States Postal Service
VASI	Visual Approach Slope Indicator
VFR	Visual Flight Rules
VOCs	Volatile Organic Compounds
VOR	Very High Frequency Omnidirectional Range
WAAS	Wide Area Augmentation Systems
WADP	West Anchorage District Plan
WBI	Whole Body Imaging
WHA	Wildlife Hazard Assessment
WHMP	Wildlife Hazard Management Plan

5.1 Introduction

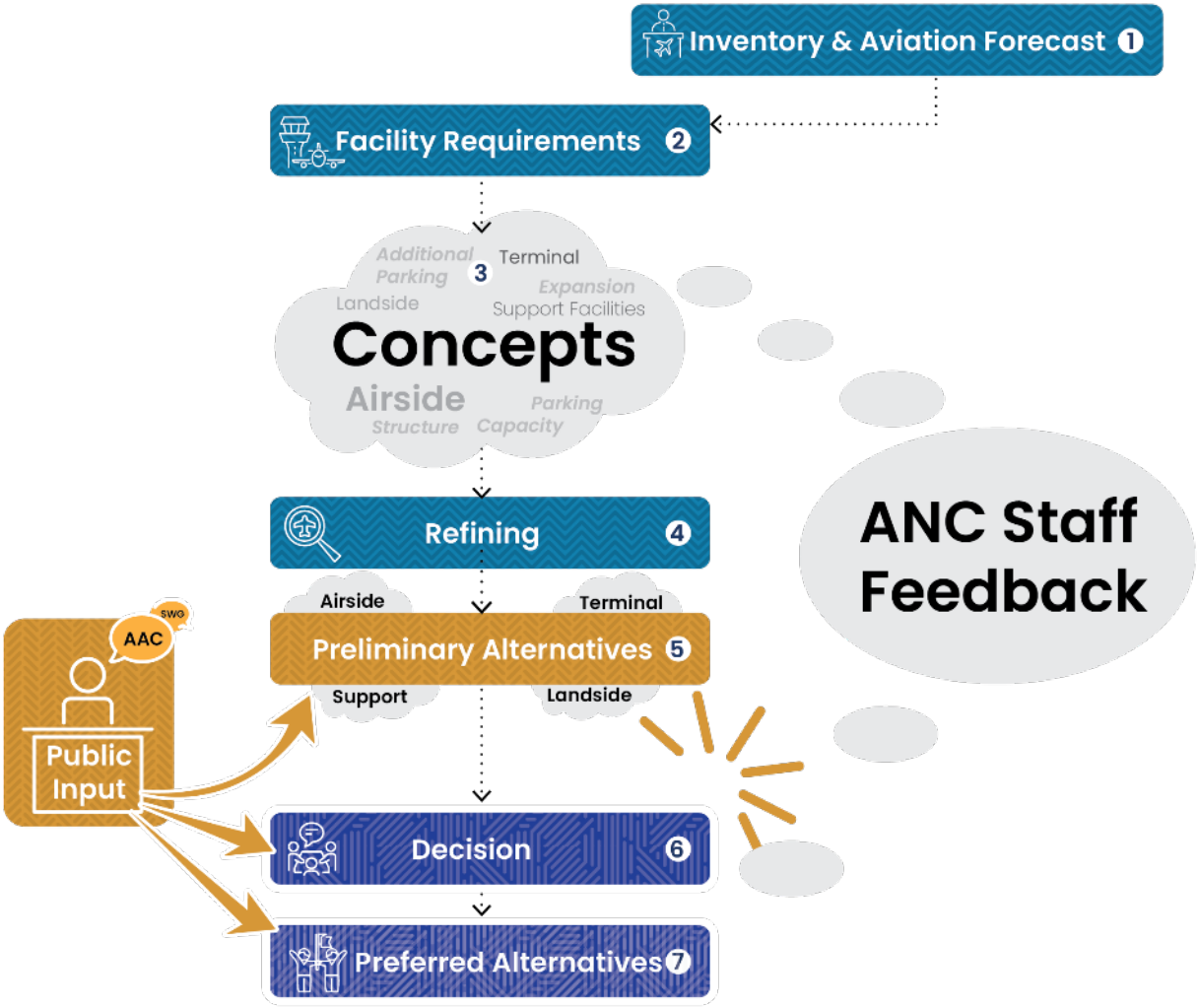
The purpose of this chapter is to identify and evaluate development alternatives for Ted Stevens Anchorage International Airport (also referred to as "Airport" or "ANC" throughout this report) that accommodate forecast aviation demand and satisfy the associated facility requirements identified in **Chapter 4, Facility Requirements**.

Alternatives were developed by grouping key airport facilities into the following four major functional areas:

- Airside
- Passenger Terminal
- Landside
- Support Facilities

The alternatives evaluation process commenced by developing concepts for each functional area using industry resources and recommended methodologies. The Master Plan team conducted workshops with Airport staff to refine these concepts based on their feedback. Subsequently, preliminary alternatives were formulated for each of the four functional areas and presented at public meetings. Following public input and additional feedback from Airport staff, preferred alternatives were recommended for each functional area. This process is outlined in **Figure 5-1**.

Figure 5-1
Alternatives Evaluation Process



Source: RS&H, 2024

5.2 Airside Concepts

The initial airside alternative concepts aim to address challenges within the current airfield infrastructure and ensure operational capacity and capability during peak activity periods. Primary focus areas include runways, taxiways, and air cargo aircraft parking. There is a need for additional capacity for all previously listed focus areas by Planning Activity Level (PAL) 3 due to forecast demand.

FAA design guidance described in FAA AC 150/5300-13B*, Airport Design, Change 1,* has been used to prepare all concepts and alternatives.

5.2.1 New Runway Capacity Alternative

The Airport may require additional runway capacity towards the end of the 20-year planning horizon. This is based on airfield demand / capacity analysis completed as part of the 2013 Alaska International Airport System (AIAS) Planning Study (AIAS Planning Study) and the 2014 ANC Airport Master Plan Update. The results of the analysis completed as part of the 2014 ANC Airport Plan Update was used to identify the Preferred Alternative to construct a new runway at ANC as one option to accommodate forecast demand if and when the operational demand warrants infrastructure changes.

The 2014 ANC Airport Master Plan Update recommended implementing a new runway in the West Airpark parallel to the existing Runway 15-33. Designated land has been preserved for a potential fourth runway at this location since the completion of the 2014 ANC Airport Master Plan Update. Airside concepts were developed to avoid conflict with this preserved area. This potential new runway, Runway 15R-33L, would allow for simultaneous aircraft arrivals and departures of ANC's most demanding aircraft users with a length of 8,000' and width of 200', and adequate centerline separation distance from its parallel runway. The development of a potential new runway at ANC is a demand driven, phased approach.

Phase 1 includes modifying existing infrastructure to meet FAA design standards, aligning with recommendations from the 2014 Master Plan. Infrastructure rehabilitation would be undertaken when existing facilities are in need of rehabilitation to meet current FAA standards. Phase 1 is complete.

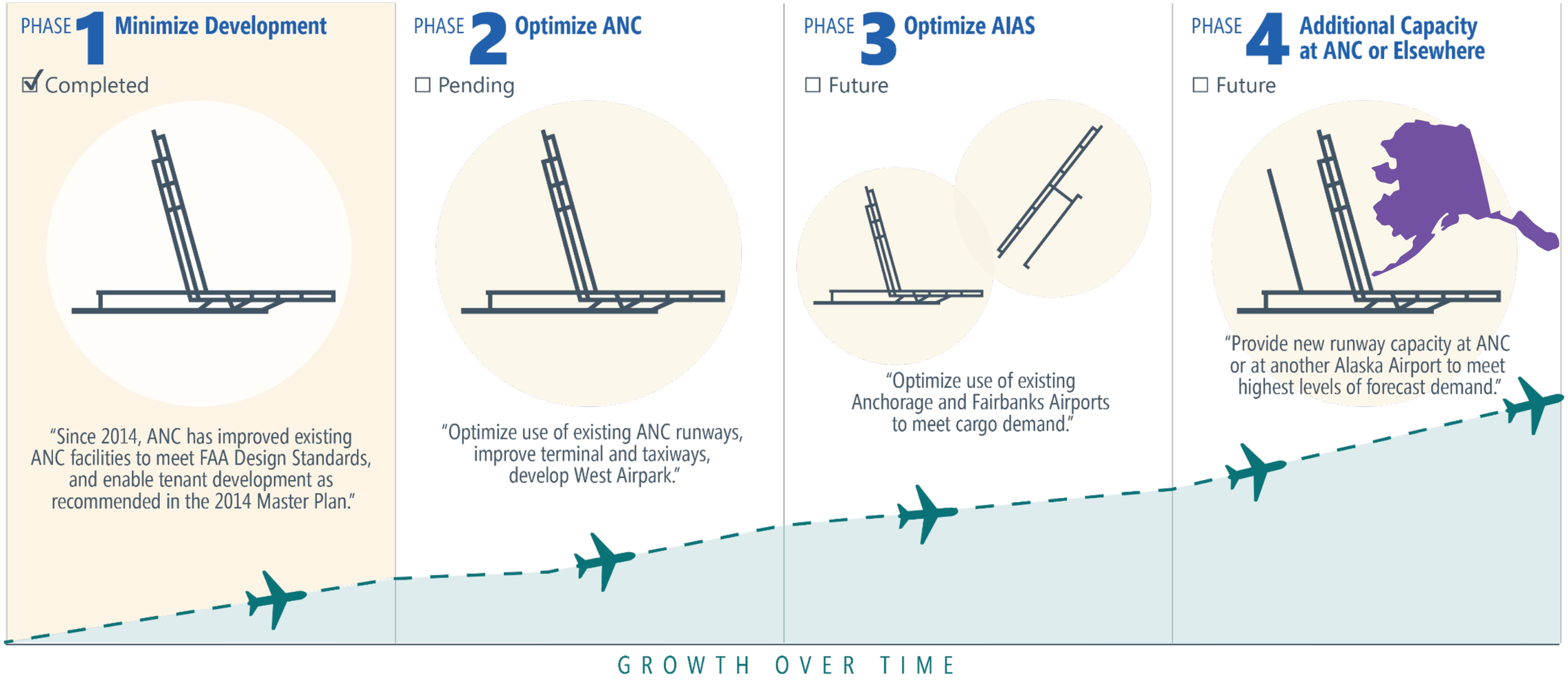
Phase 2 includes maximizing the use of existing three-runway system at ANC. This includes improvements enhance the efficiency of the Airport in the most fiscally responsible manner possible by making better use of existing assets. This Phase is underway as of 2024.

Phase 3 includes optimizing the use of both international airports within the Alaska International Airport System (AIAS). ANC staff would continue coordinating with AIAS staff to identify opportunities to enhance use of Fairbanks International Airport to meet growing cargo demand, in lieu of additional growth at ANC. This may require expansion of Fairbanks International Airport and possible airline incentives. ANC staff is engaged in ongoing efforts to encourage new airlines flying to Alaska to consider operating at Fairbanks International Airport.

Phase 4 includes providing additional runway capacity at ANC or potentially at another Alaskan airport to accommodate demand. Implementation of a new runway at ANC would result in substantial impacts and require significant implementation costs. The long-term justification for a new runway at ANC versus another Alaskan airport would need to be evaluated. If demand continues to grow to the point where additional runway capacity is required, a feasibility study should be undertaken to evaluate opportunities to construct a new runway at another Alaskan airport in lieu of at 4th runway at ANC. However, land should be preserved at ANC in the West Airpark to construct a new runway at a potential future date until additional studies can confirm that a new runway at ANC is not required to accommodate additional aviation demand in Alaska.

The Preferred Runway Capacity Alternative describing the demand-driven, phased approach is depicted in **Figure 5-2**.

Figure 5-2
Preferred Runway Capacity Alternative


PHASE 1 Minimize Development
☑ Completed
"Since 2014, ANC has improved existing ANC facilities to meet FAA Design Standards, and enable tenant development as recommended in the 2014 Master Plan."
PHASE 2 Optimize ANC
☐ Pending
"Optimize use of existing ANC runways, improve terminal and taxiways, develop West Airpark."
PHASE 3 Optimize AIAS
☐ Future
"Optimize use of existing Anchorage and Fairbanks Airports to meet cargo demand."
PHASE 4 Additional Capacity at ANC or Elsewhere
☐ Future
"Provide new runway capacity at ANC or at another Alaska Airport to meet highest levels of forecast demand."
GROWTH OVER TIME

Source: RS&H Analysis, 2024

5.2.2 North-South Taxiway Concepts

Current taxi operations face constraints such as limited bi-directional flow and frequent runway crossings. These constraints cause congestion for aircraft taxiing and limit airport capacity. While currently manageable, these challenges are expected to increase in frequency and impact as airfield activity grows.

The terminal area taxiway concepts aim to alleviate congestion by considering the addition of a taxiway parallel to taxiway to enable simultaneous bi-directional flow. Various concepts for a parallel taxiway adjacent to Taxiway R, also known as the North-South Taxiway Concept group, were examined to mitigate conflicts between departing aircraft from Runway 33 and arriving aircraft from Runway 7L. Another concept explored involved a parallel taxiway to Taxiway K, also known as the East-West Taxiway Concept, intended to address challenges posed by aircraft arriving from Runway 7L intersecting traffic from Taxilane G1 and Taxiway E. Additionally, the concepts investigated role and impact the Airport-managed cargo parking positions (also known as remain overnight, or RON, positions) within the terminal area, which contribute significantly to congestion. The potential for realigning or repurposing some of these positions was explored as part of the initiative to reduce the terminal area congestion.

5.2.2.1 North-South Taxiway Concept 1

North-South Taxiway Concept 1 entails the realigning and widening Taxilane V and a new ADG-VI taxiway parallel to Taxiway R. Taxilane V shifts southwards and expands to an ADG-VI taxiway where it intersects with Taxiway E, facilitating additional access for ADG-VI aircraft to the North Terminal apron. This segment also serves as an access point for the new ADG-VI parallel taxiway, positioned 298.5 feet east of Taxiway R, in compliance with the ADG-VI taxiway centerline to parallel taxiway centerline separation standard outlined in FAA Advisory Circular (AC) 150/5300-13B, *Airport Design, Change 1*. The parallel taxiway extends north from the realigned Taxiway V and reconnects with Taxiway Ras to not impact the proposed Alaska Cargo & Cold Storage (ACCS) facility leasehold. The tug road is rerouted southwards to align with the new Taxiway V then redirected northwards parallel to the new ADG-VI taxiway. North-South Taxiway Concept 1 is depicted in **Figure 5-3**.

In addition to the Taxilane V and tug road realignment, this concept impacts the current snow disposal sites and the existing RON parking position R14. The realignment of Taxilane V and the proposed parallel taxiway affects approximately 8,700 square feet of snow disposal areas maintained by field maintenance and 7,000 square feet of snow disposal areas maintained by lease tenants. A future snow disposal site of around 29,800 square feet is proposed between Taxiway R and Taxilane G1. This site accommodates the impact on existing sites and provides

additional area necessary for the new taxiways. To ensure the required Taxiway Object Free Area (TOFA) clearance for the realigned Taxilane V is maintained, RON position R14 is eliminated.

Concept 1 proposes a method of expanding capacity for taxiway congestion within the terminal vicinity while minimizing disruptions to current and proposed infrastructure and leaseholds. Realigning and widening of Taxilane V, along with the proposed north-south ADG-VI taxiway, facilitate increased flow to and from the North Terminal area and North Airpark. Future snow disposal needs are met within an existing space situated between the TOFAs of Taxiway M and Taxilane G1, preventing the need for additional airfield closures. However, the proposed ADG-VI parallel taxiway, spanning only from Taxiway V to the future ACCS site, may not provide sufficient capacity to reduce taxiway congestion and resolve the head-to-head conflicts between Taxiway R and Taxiway K.

5.2.2.2 North-South Taxiway Concept 2

Like Concept 1, Concept 2 entails the realignment of Taxilane V and introduces a new ADG-VI taxiway parallel to Taxiway R. Taxilane V undergoes the same realignment, enhancing access for ADG-VI aircraft to the North Terminal apron, while also serving as an entry point for the new ADG-VI parallel taxiway. The tug road is adjusted to match the new taxiway configuration. Concept 2 differs from Concept 1 by extending the parallel taxiway northward from the realigned Taxilane V to connect with Taxiway P, crossing through and impacting the proposed Alaska Cargo & Cold Storage (ACCS) facility leasehold. North-South Taxiway Concept 2 is depicted in **Figure 5-4**.

Concept 2 impacts the same areas seen in Concept 1, including the current snow disposal sites and the existing RON position R14, which necessitates closure. Additionally, Concept 2 introduces an impact of approximately 5.1 acres at the proposed ACCS site due to the ADG-VI parallel taxiway crossing through it. The impact on snow disposal sites maintained by lease tenants is larger in Concept 2 compared to Concept 1, covering approximately 22,800 square feet. To accommodate this increased impact and the extended length of the parallel taxiway, the proposed future snow disposal site between Taxiway R and Taxilane G1 expands to approximately 52,900 square feet.

Concept 2 presents a comparable solution to Concept 1 for alleviating taxiway congestion near the terminal, but with a more extensive ADG-VI parallel taxiway resulting in greater infrastructure requirements and impacts. A full north-south ADG-VI parallel taxiway linking two east-west taxiways, Taxiway V and Taxiway P, enhances access from the terminal area to the North Airpark but adversely affects the proposed ACCS site. Despite necessitating additional space for future snow disposal, accommodation is still achieved between the TOFAs of Taxiway R and Taxilane G1 without further airfield closures.

5.2.2.3 North-South Taxiway Concept 3

Concept 3 follows the same premise as the previous concepts, incorporating an ADG-VI parallel taxiway. It includes the realignment of Taxilane V and the adjustment of the tug road, as seen in Concepts 1 and 2. Corresponding with Concept 2, Concept 3 features the ADG-VI parallel taxiway traversing through the proposed ACCS site and connecting with Taxiway P. In this iteration, the ADG-VI taxiway extends further south before intersecting with Taxiway K. Throughout this extension, the existing east-west Taxiways M and K are retained to ensure continued access to the terminal area. North-South Taxiway Concept 3 is depicted in **Figure 5-5**.

Similar to the impacts observed in previous concepts, Concept 3 also affects the same areas. RON position R14 is eliminated and 5.1 acres of the proposed ACCS site are impacted. Due to the southward extension of the ADG-VI parallel taxiway between the realigned Taxilane V and Taxiway M, Taxilane G1 is removed in this concept. Access to RON positions R13 and R12 is via the new ADG-VI taxiway. The snow disposal site impacts are larger in Concept 3 due to the southward extension of the new ADG-VI parallel taxiway. An additional 167,000 square feet of snow disposal sites maintained by field maintenance and 52,600 square feet of temporary snow storage are impacted in this concept. To mitigate these impacts and accommodate the need for additional snow disposal required by the new taxiways, three future snow disposal sites are proposed. These sites include approximately 123,600 square feet near the existing Taxilane V, 38,900 square feet at RON position R14, and 70,000 square feet at the existing Taxiway G segment between Taxiway K and Taxiway E. Closure of Taxiway G is necessary to accommodate this new snow disposal site.

Concept 3 presents the most extensive solution to mitigate taxiway congestion around the terminal area. Proposing a full-length ADG-VI parallel taxiway between Taxiway K and Taxiway P provides improvements in bidirectional taxiway flow throughout the entire terminal vicinity. Aircraft can taxi both southward for departures on Runway 33 and northward toward the North Airpark simultaneously. However, the considerable area allocated for this new taxiway results in consequential impacts, including the impact on the proposed ACCS site and heightened requirements for future snow disposal.

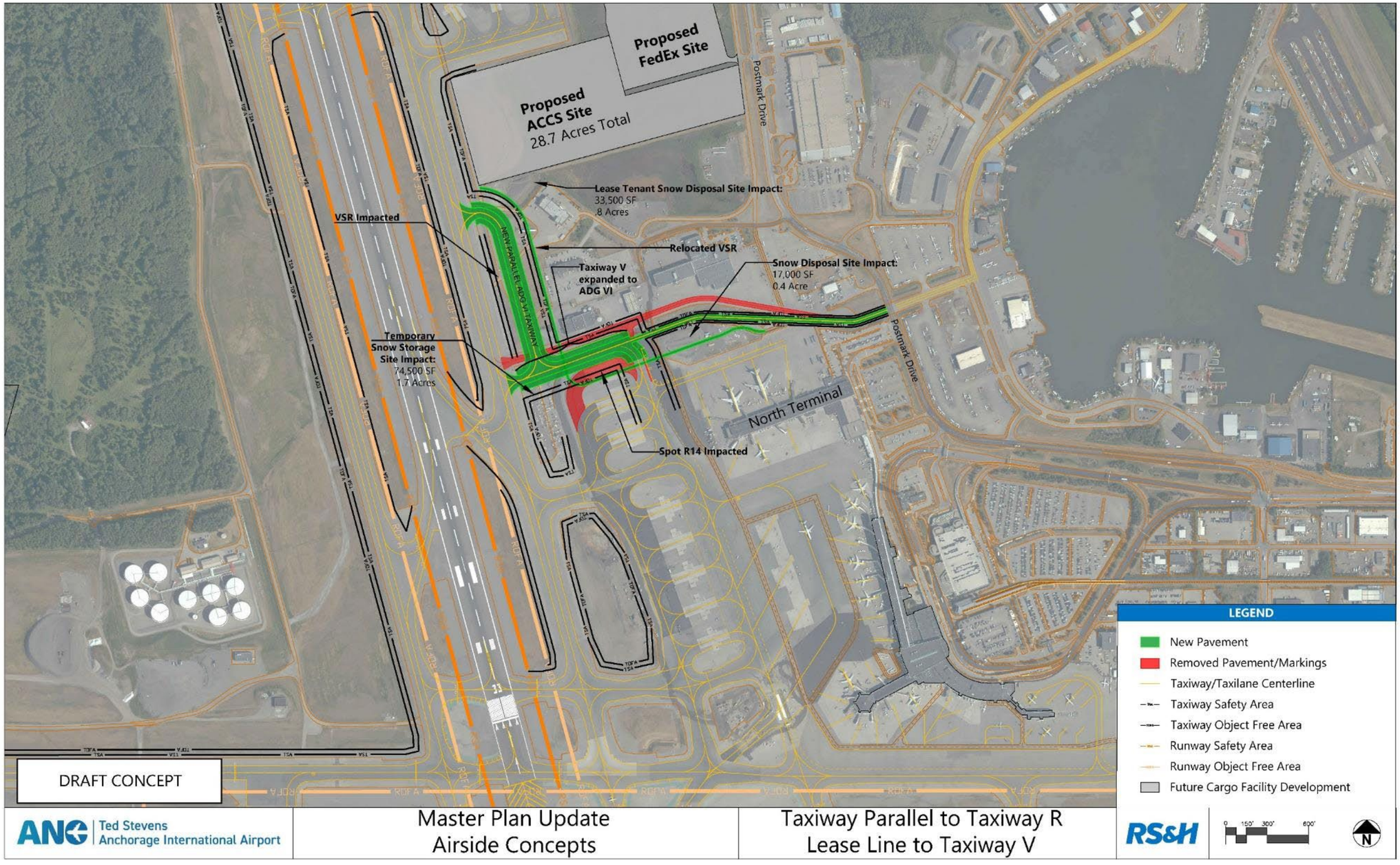
5.2.2.4 North-South Taxiway Concept 4

Concept 4 follows the same realignment of Taxilane V observed in previous concepts and combines elements from Concept 1 and Concept 3 for the proposed ADG-VI parallel taxiway. Correlating with Concept 1, the northern section of the ADG-VI taxiway in this concept reconnects with Taxiway R before crossing the proposed ACCS facility. As was what is depicted in Concept 3, this concept suggests the full southward extension of the ADG-VI taxiway to Taxiway K, while retaining the east-west crossing Taxiway M and Taxiway K. North-South Taxiway Concept 4 is depicted in **Figure 5-6**.

The impacts in Concept 4 necessitate the realignment of Taxilane V and the closure of RON spot R14, consistent with previous concepts. Taxilane G1 is removed to accommodate the southward extension of the new ADG-VI parallel taxiway. While the snow disposal site impact in this concept is less than in Concept 3, it remains larger than in the first two concepts. Concept 4 proposes the future snow disposal site from Concept 3, containing approximately 123,600 square feet, near the existing alignment of Taxilane V. However, it does not advocate for the closure of Taxiway G to allow for future snow disposal. Instead, it suggests closing RON spot R13 in addition to R14. This closure of the two parking positions will provide 87,000 square feet of additional future snow disposal area, which is adequate to accommodate the impacts to existing sites and future requirements.

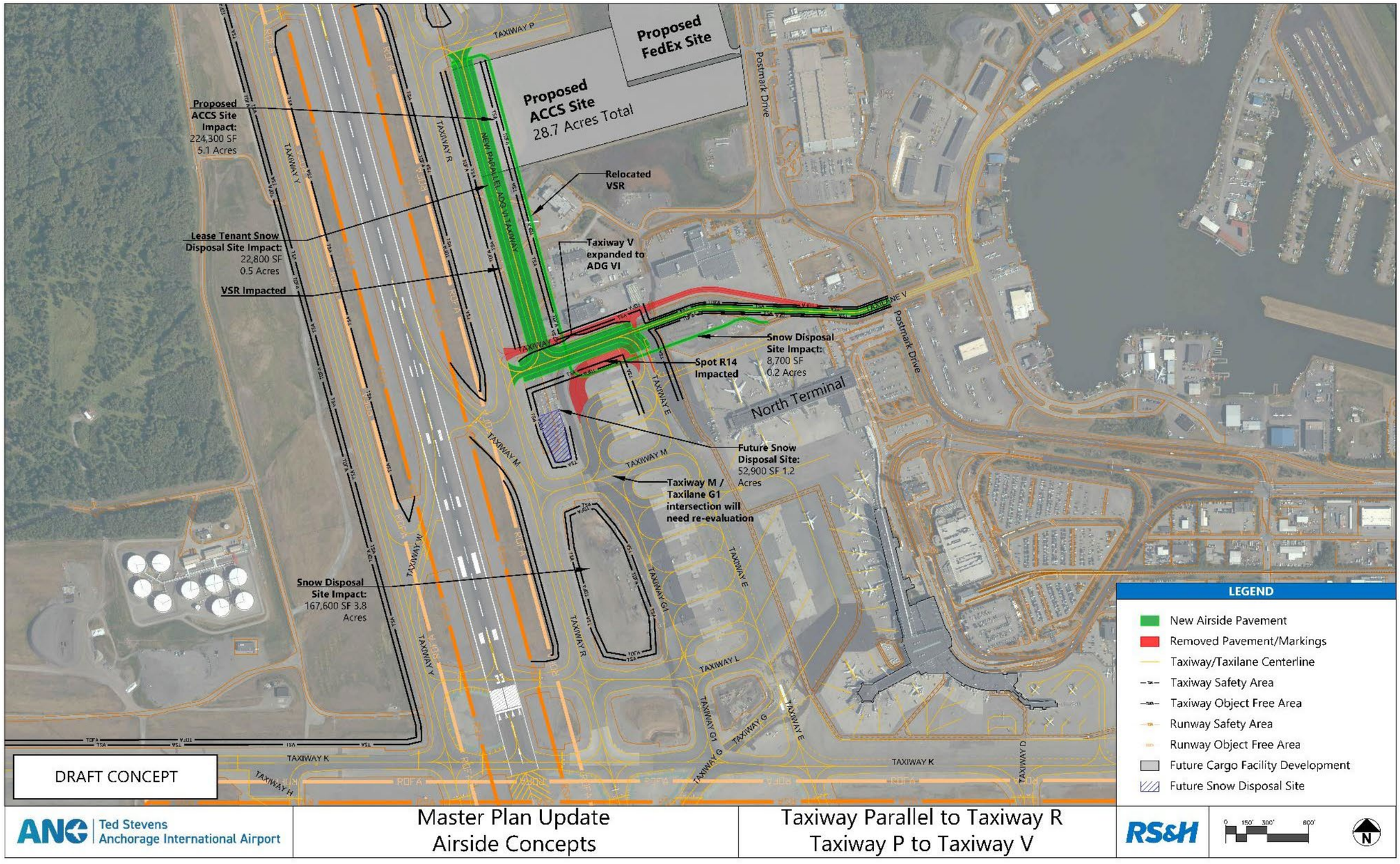
Concept 4 adopts a dynamic approach to addressing taxiway congestion by integrating elements from previous concepts. Proposing an ADG-VI parallel taxiway spanning the entire terminal area while avoiding impact on the proposed ACCS site, this alternative has a balanced enhancement in aircraft flow between the terminal area and the North Airpark. Future snow disposal are accommodated in this concept without necessitating the closure of existing taxiways.

Figure 5-3
North-South Taxiway Concept 1



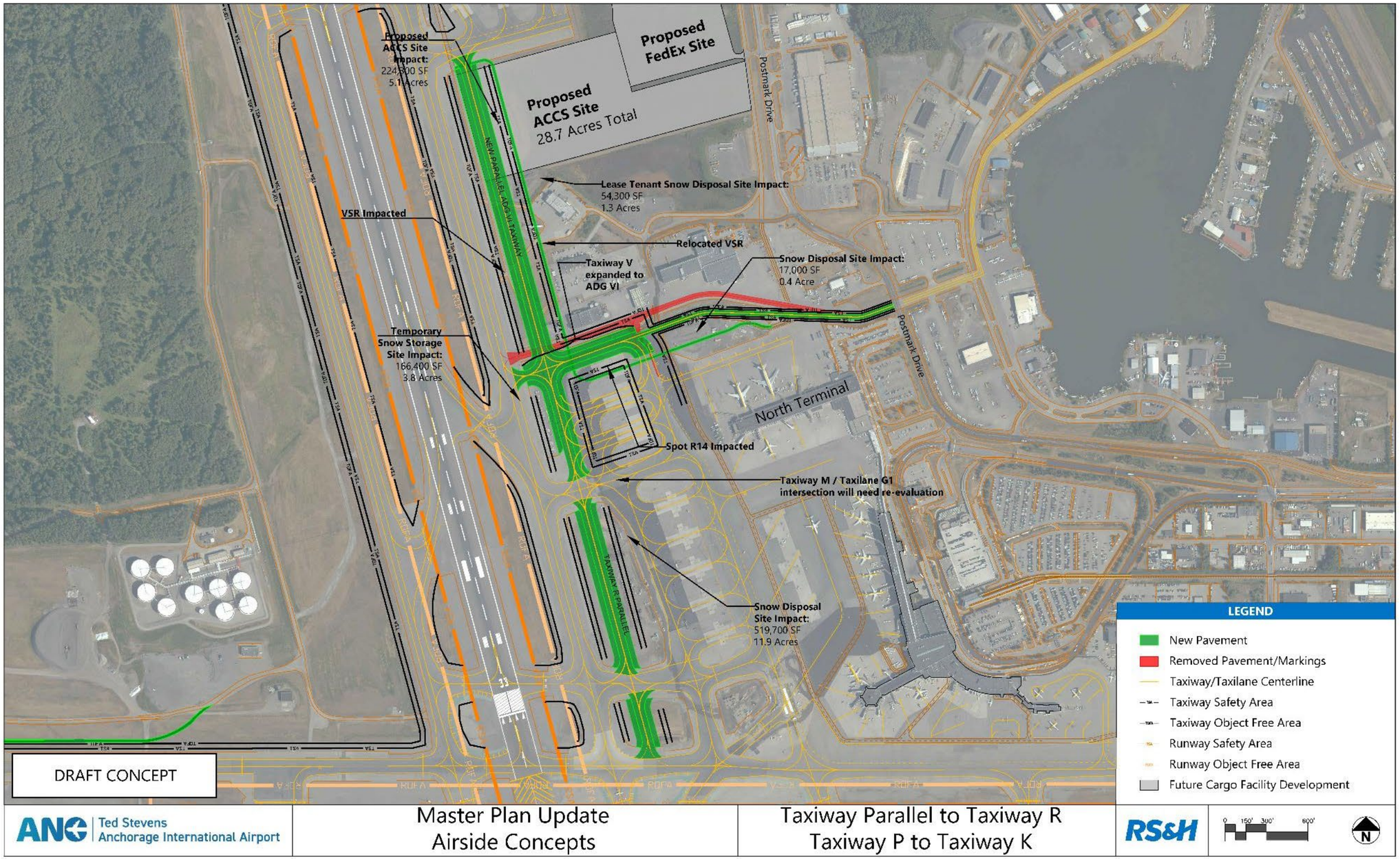
Source: RS&H, 2024

Figure 5-4
North-South Taxiway Concept 2



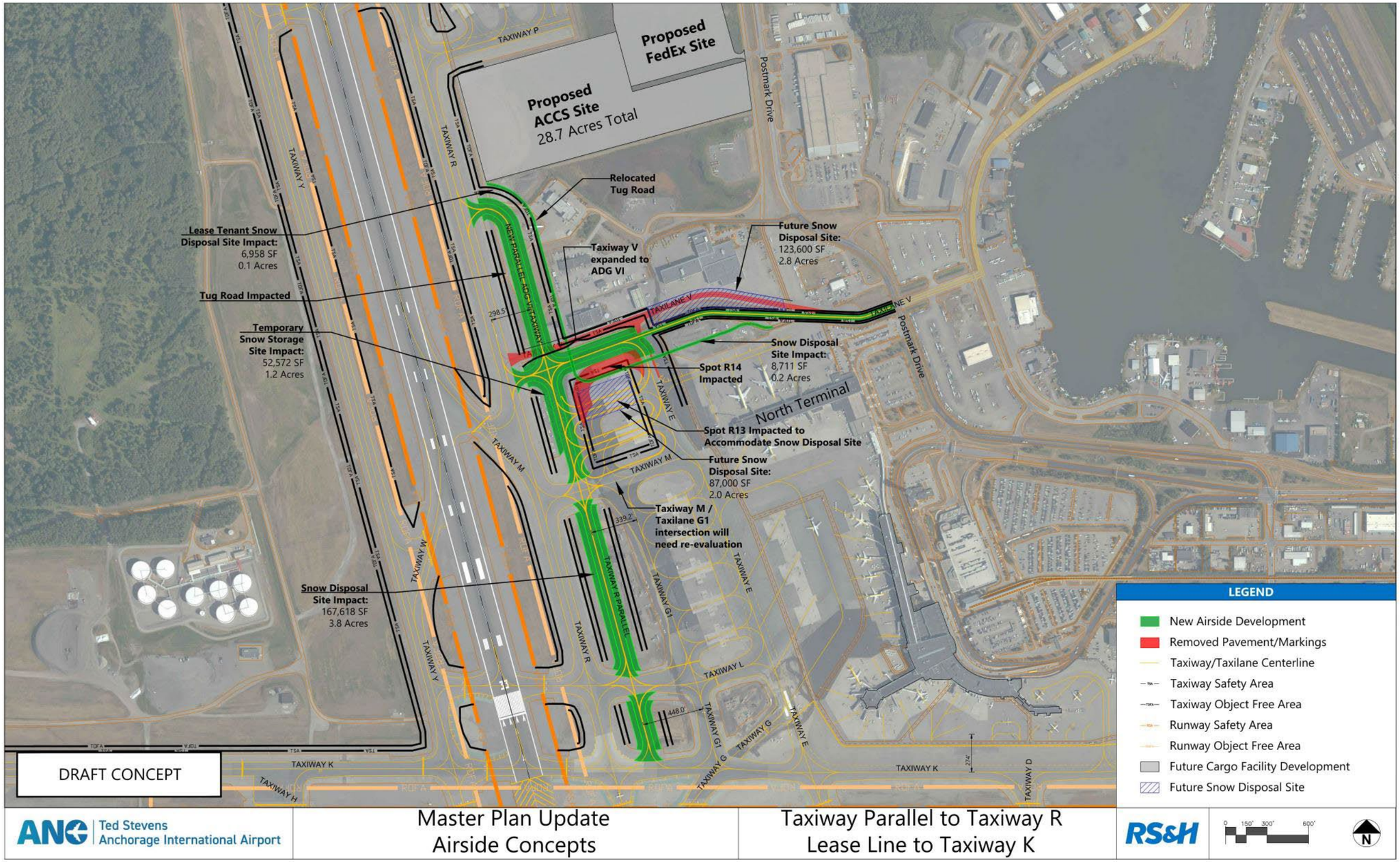
Source: RS&H, 2024

Figure 5-5
North-South Taxiway Concept 3


Proposed ACCS Site Impact: 224,500 SF 5.1 Acres
Proposed FedEx Site
Proposed ACCS Site 28.7 Acres Total
Postmark Drive
NEW PARALLEL ADG VI TAXIWAY
Lease Tenant Snow Disposal Site Impact: 54,300 SF 1.3 Acres
VSR Impacted
Relocated VSR
Taxiway V expanded to ADG VI
Snow Disposal Site Impact: 17,000 SF 0.4 Acre
Temporary Snow Storage Site Impact: 166,400 SF 3.8 Acres
North Terminal
Spot R14 Impacted
Taxiway M / Taxilane G1 intersection will need re-evaluation
TAXIWAY R PARALLEL
Snow Disposal Site Impact: 519,700 SF 11.9 Acres
33
LEGEND
New Pavement
Removed Pavement/Markings
Taxiway/Taxilane Centerline
Taxiway Safety Area
Taxiway Object Free Area
Runway Safety Area
Runway Object Free Area
Future Cargo Facility Development
DRAFT CONCEPT
ANC Ted Stevens Anchorage International Airport
Master Plan Update
Airside Concepts
Taxiway Parallel to Taxiway R
Taxiway P to Taxiway K
RS&H
0 150' 300' 600'
N

Source: RS&H, 2024

Figure 5-6
North-South Taxiway Concept 4



Source: RS&H, 2024

5.2.2.5 Terminal Area Parking Concepts

Concepts were evaluated to meet the anticipated need for future snow disposal sites with the North-South taxiway concepts that impact snow disposal sites south of M. Parking position R13 and R14 have already been identified for closure to accommodate extra snow disposal sites as a result of the proposed introduction of the new N-S taxiway. This section's analysis explores the optimal locations for these new sites and assesses the potential realignment of existing parking positions to enhance snow disposal capabilities. The realignment of these existing parking positions is depicted only as a proof of concept, and are only relevant in North-South Taxiway Concept 3 and North-South Taxiway Concept 4. It is not recommended that these concepts be implemented if neither of the prior concepts are implemented.

R7-R11 Parking Concept 1

Concept 1 for the realignment of R7-R11 parking positions is developed in conjunction with the proposed parallel taxiways outlined in North-South Taxiway Concept 3 and 4. The objective of Concept 1 is to expand the snow disposal area effectively to accommodate the new parallel taxiway. R7-R11 Parking Concept 1 is depicted in **Figure 5-7**.

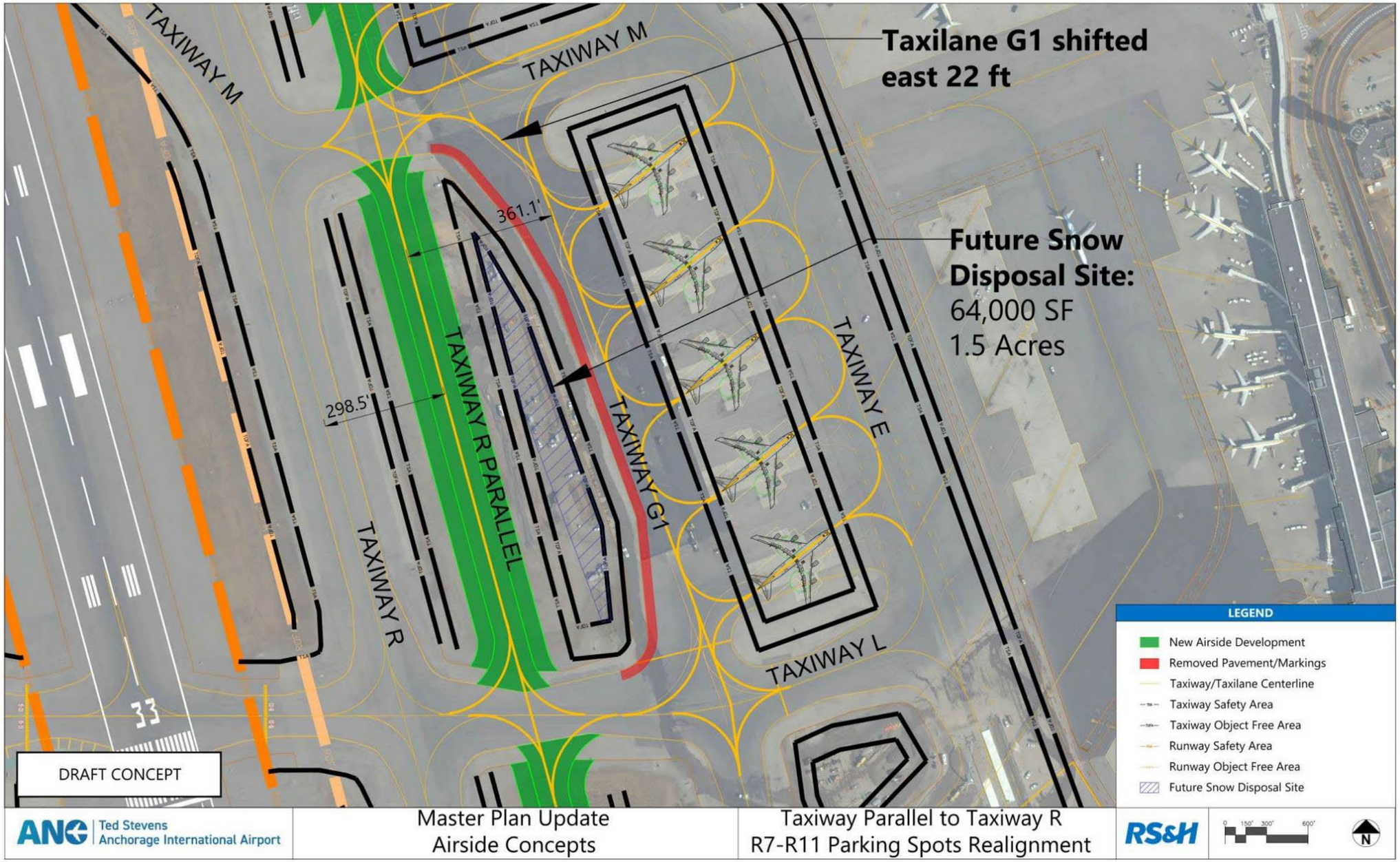
This concept suggests a 22-foot eastward shift of Taxilane G1, thereby expanding the snow disposal area beyond the Taxilane G1 TOFA to the west, providing an additional 64,000 square feet. Concurrently, parking positions R7-R11 are repositioned to ensure clearance of the adjusted Taxilane G1 TOFA to the east. The realignment of RON spots R7-R11 does not mandate the closure of any existing spots, and all five spots remain operational.

R7-R11 Parking Concept 2

Concept 2 for the realignment of parking positions R7-R11 is also developed in conjunction with North-South Taxiway Concepts 3 and 4. The objective remains consistent with Concept 1, and will the snow disposal area effectively to accommodate the new parallel taxiway. R7-R11 Parking Concept 2 is depicted in **Figure 5-8**.

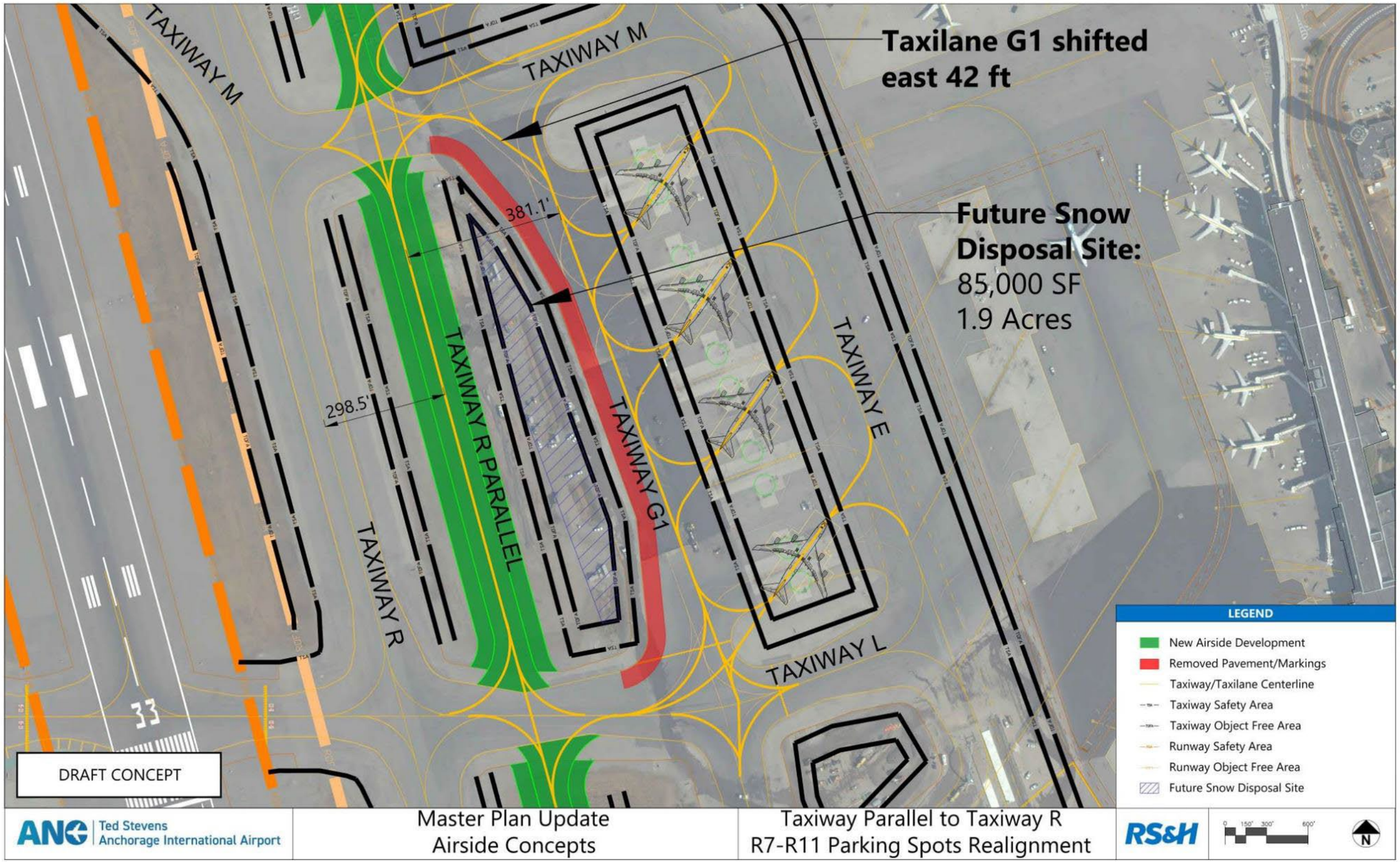
Concept 2 proposes a more extensive shift of Taxilane G1, moving it eastward by 42 feet. This adjustment results in a larger snow disposal area beyond Taxilane G1 TOFA to the west, spanning 85,000 square feet. In conjunction with this shift, RON spots R7-R11 are realigned and reduced from five to four spots to maintain clearance of the adjusted Taxilane G1 TOFA to the east. Although this option requires the closure of an existing parking position, it allows for a greater snow disposal area compared to Concept 1.

Figure 5-7
R7-R11 Parking Concept 1



Source: RS&H, 2024

Figure 5-8
R7-R11 Parking Concept 2



Source: RS&H, 2024

5.2.2.6 North-South Taxiway Concept Refinement

The potential impact to existing leaseholds was used as the primary evaluation criteria to identify if concepts were retained for further refinement. An impact on an existing leasehold would introduce more complexity to the proposed development and may impact tenant operations, so concepts impacting existing leaseholds are not viable.

Only two of the concepts did not interfere with existing leaseholds. North-South Taxiway Concept 1 and North-South Taxiway Concept 4 do not impact the ACCS leasehold, as they propose the new taxiway segment reconnecting with Taxiway R prior to the ACCS leasehold boundary. North-South Taxiway Concept 4 resembles an evolution of North-South Taxiway Concept 1; however, North-South Taxiway Concept 4 does not widen any portion of Taxiway V to ADG-VI and the taxiway concept extends to Taxiway K to the south, providing a circulation advantage for aircraft than the shorter North-South Taxiway Concept 1.

North-South Taxiway Concept 4 was retained for further consideration as an alternative with the two criteria satisfied.

5.2.2.7 North-South Taxiway Preliminary Alternative

The development of the North-South Preliminary Taxiway Alternative is guided by the proposed parallel taxiway outlined in previous concepts, while aiming to minimize impacts on existing facilities and the airfield. Unlike prior concepts, it maintains the current alignment of Taxilane V as an ADG-I taxilane and does not convert any portion to ADG-VI. Consistent with North-South Taxiway Concept 4, this alternative proposes ADG-VI parallel taxiway extending from Taxiway K to the planned ACCS site which avoids impact to the ACCS leasehold. The Preliminary North-South Taxiway Alternative is depicted in **Figure 5-9**.

It was concluded that closing spots R13-R15 to accommodate a future snow disposal site would result in the least disruption to the existing airfield compared to alternative measures, such as realigning RON spots R7-R11 and shifting Taxilane G1. This alternative also addresses a head-to-head conflict area by recommending the closure of the Taxiway G segment between Taxiway K and Taxiway E, thereby enhancing airfield safety and operational efficiency.

5.2.2.8 North-South Taxiway Preferred Alternative

Ultimately, the alternative was not recommended for implementation in this Master Plan due to the cost, airfield impact, and marginal gains in simulated airfield congestion. Additional detail of the airfield simulation results is included in *Section 5.2.6*.

5.2.2.9 Passenger RON Concept

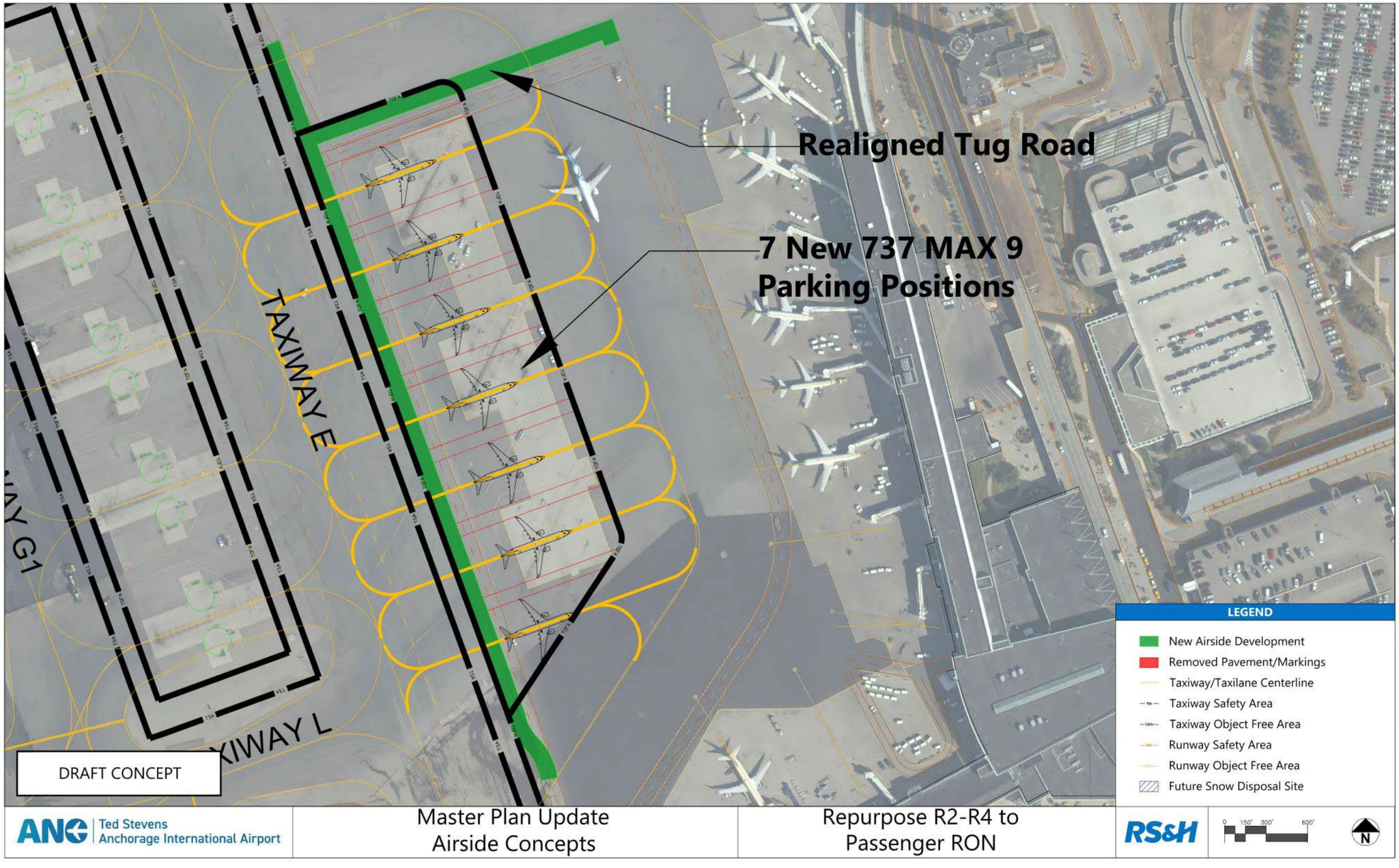
More RON parking for passenger aircraft is desired at ANC as passenger operations grow in frequency. As cargo parking positions are relocated away from the terminal area, the newly available space can be used for passenger aircraft RON positions to enhance operational efficiency for air carriers and the Airport. This concept is not intended to reduce the amount of cargo parking positions, and would only be implemented once the cargo parking capacity of the space these air carrier positions would occupy has been satisfied elsewhere at the Airport.

R2-R4 RON Parking Concept

The R2-R4 Parking Concept focuses on converting the terminal area parking positions R2-R4 into passenger parking positions. This repurposing involves changing the design aircraft classification of the positions from ADG-V to ADG-III. The objective is to maximize the number of ADG-III parking positions outside the Taxiway E TOFA. Larger ADG-V aircraft will be accommodated elsewhere on the Airport to accommodate these changes. The R2-R4 Parking Concept is depicted in **Figure 5-9**.

This concept introduces seven new RON positions designed for Boeing 737 MAX 9 aircraft. The lead-in lines originating from Taxiway E are adjusted to align with the layout of these new positions and the current tug road is realigned to run along the edge of the Taxiway E TOFA. The existing fuel pits for the current parking positions would become inactive in this concept as a result of these new positions. Fueling for aircraft parked at these new positions would need to be facilitated by alternative methods, or alternatively, the fuel pits require relocation to accommodate the new layout.

Figure 5-9
RON Spots R2-R4 Concept



Source: RS&H, 2024

5.2.3 Terminal Area East-West Taxiway Concept

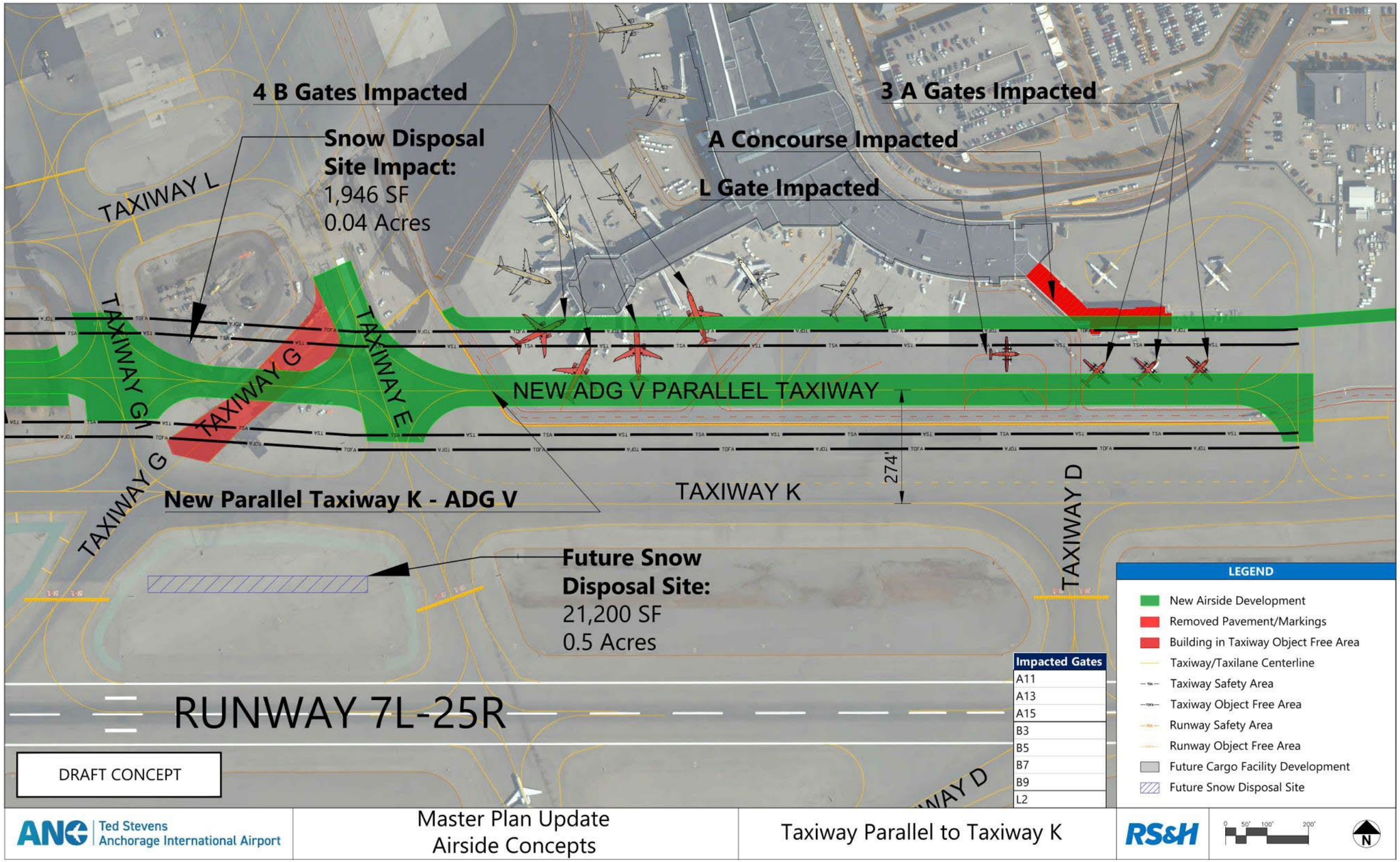
The Preliminary East-West Taxiway Concept focuses on resolving the head-to-head aircraft taxiing traffic between Taxiway K and Taxilane G1/Taxiway E by providing an east-west ADG-V taxiway parallel to Taxiway K. This new parallel taxiway is proposed 275 feet north of Taxiway K, adhering to the ADG-V taxiway centerline to parallel taxiway centerline separation standard outlined in FAA *AC 150/5300-13B Airport Design, Change 1*. The portion of Taxiway G between Taxiway K and Taxiway E would be removed in this scenario to limit the number of taxiway intersections in this area.

This concept requires the realignment of a portion of the existing tug road around the terminal gates. The road would be shifted north by 142.5 feet from the proposed ADG-V taxiway centerline, complying with the FAA ADG-V taxiway centerline object separation standard. The Preliminary East-West Taxiway Concept is depicted in **Figure 5-10**.

The primary impacts in this preliminary concept are concentrated at the South Terminal. Four narrow-body boarding bridge gates in B Concourse, both ground board L Gates, and all eight ground board A Gates in the A Concourse would be required to be closed. The A Concourse in its entirety would also be required to be demolished. Approximately 2,000 square feet of snow disposal sites maintained by ANC Field Maintenance would be impacted by the new ADG-V parallel taxiway. A future snow disposal site of approximately 21,200 square feet is proposed between Runway 7L-25R and Taxiway K to mitigate this impact and address the need for additional snow storage resulting from the new ADG-V taxiway.

The Preliminary East-West Taxiway Concept significantly impacts the South Terminal. This concept requires substantial terminal reconfiguration, as it requires the demolition of a portion of the A Concourse and multiple gates.. Future snow disposal requirements are accommodated in this concept without closing existing areas of the airfield. This concept was not evaluated for further feasibility due to these impacts.

Figure 5-10
Preliminary East-West Taxiway Concept



Source: RS&H, 2024

5.2.4 South Airpark Taxiway Concepts

The South Airpark also faces challenges relating to bi-directional taxiing and frequent runway crossings.

The South Airpark Taxiway Concepts focus on resolving head-to-head conflicts between westbound aircraft on Taxiway Z and aircraft exiting the runway from Runway 7R. To achieve this, the concepts explore for the construction of a parallel taxiway adjacent to Taxiway Z. This new taxiway would specifically cater to general aviation (GA) aircraft, offering them a dedicated route to access the South Airpark apron without conflicting with aircraft exiting Runway 7R. These concepts also provide enhanced access to the future NorthLink site adjacent to the South Airpark apron.

5.2.4.1 Taxiway C

Taxiway C is located in the middle third of both parallel runways. FAA design standards suggest to avoid taxiways providing access to these portions of the runway due to them being high energy intersections. The portion of Taxiway C that is in between the parallel runways is also oriented at a non-standard angle. The new taxiway that intersects the Runway 25L threshold would also intersect the Runway 7L-25R middle third.

It is recommended is to defer the decision on which taxiway system appropriate, therefore Taxiway C and the new taxiway are both depicted to illustrate the flexibility for one or the other. The analysis recommends that the Airport continue to coordinate with FAA on the most appropriate disposition on the taxiways in this area. The analysis recommends the Airport convene a Safety Risk Management (SRM) Panel to evaluate the implications of both. This SRM would be a process separate to this report which will incorporate formalized safety risk management for planning, approval, and development of this nuanced scenario.

5.2.4.2 South Airpark Taxiway Concept 1

Concept 1 proposes the construction of a new ADG-III parallel taxiway and accompanying tug road south of Taxiway Z. The ADG-III parallel taxiway extends from the northeast end of the NorthLink site to Taxiway F, incorporating two entrance taxiways from Taxiway Z. The west entrance provides access to the NorthLink site and the north-south section of Taxiway Z, while the east entrance facilitates access to and from Taxiway F. The tug road is proposed to run along the edge of the Taxiway Z TOFA and proposed parallel taxiway TOFA. South Airpark Taxiway Concept 1 is depicted in **Figure 5-11**.

The introduction of the ADG-III parallel taxiway and tug road impacts approximately 1.1 acres of the South Airpark apron west of Taxiway F and necessitates the demolition of a building to accommodate the tug road's alignment outside the TOFA. Approximately 0.7 acres of the apron east of Taxiway F is affected by the tug road. The new taxiway and tug road require additional area designated for future snow disposal. To accommodate this, a future snow disposal site of approximately 5,250 square feet is proposed.

Concept 1 allows GA aircraft to taxi onto Taxiway Z from the South Airpark apron without impeding aircraft exiting Runway 7R, while also improving access to the NorthLink Site. This concept minimally impacts existing facilities and future snow disposal requirements, but it only partially resolves the head-to-head conflict issue, as aircraft on aprons further east still need to taxi east on Taxiway Z.

5.2.4.3 South Airpark Taxiway Concept 2

Concept 2 resembles the layout of Concept 1, but with a further eastward extension of the ADG-III parallel taxiway beyond Taxiway F. The extension spans eastward from Taxiway F, crossing through the South Airpark fuel depot before reconnecting with Taxiway Z prior to the Aircraft Rescue and Firefighting (ARFF) Facility. This concept proposes the demolition of the existing entrance to Taxiway F from Taxiway Z. Access to Taxiway F would be via the east and west entrances of the new parallel taxiway. The tug road in this concept runs along the edge of the TOFA of the parallel taxiway before looping around the ARFF Facility and proceeding eastward along the edge of the Taxiway Z TOFA. South Airpark Taxiway Concept 2 is depicted in **Figure 5-12**.

Concept 2 shares the same impacts as Concept 1, with the added impact of the South Airpark fuel depot due to the further extension of the ADG-III parallel taxiway. Both the taxiway and tug road intersect the fuel depot area, necessitating its relocation. The increased length of the parallel taxiway also requires additional space for snow disposal, but can still be accommodated within the same area as proposed in Concept 1.

In this concept, GA aircraft taxiing east on Taxiway Z can merge onto the new ADG-III parallel taxiway before reaching the Runway 7R high-speed exit. Closing the entrance to Taxiway F from Taxiway Z and redirecting traffic flow through the new taxiway addresses direct apron-to-runway access issues between the high-speed exit and Taxiway F. Disadvantages of Concept 2 include impacts on the South Airpark fuel depot and the necessity for the tug road to detour around an existing building.

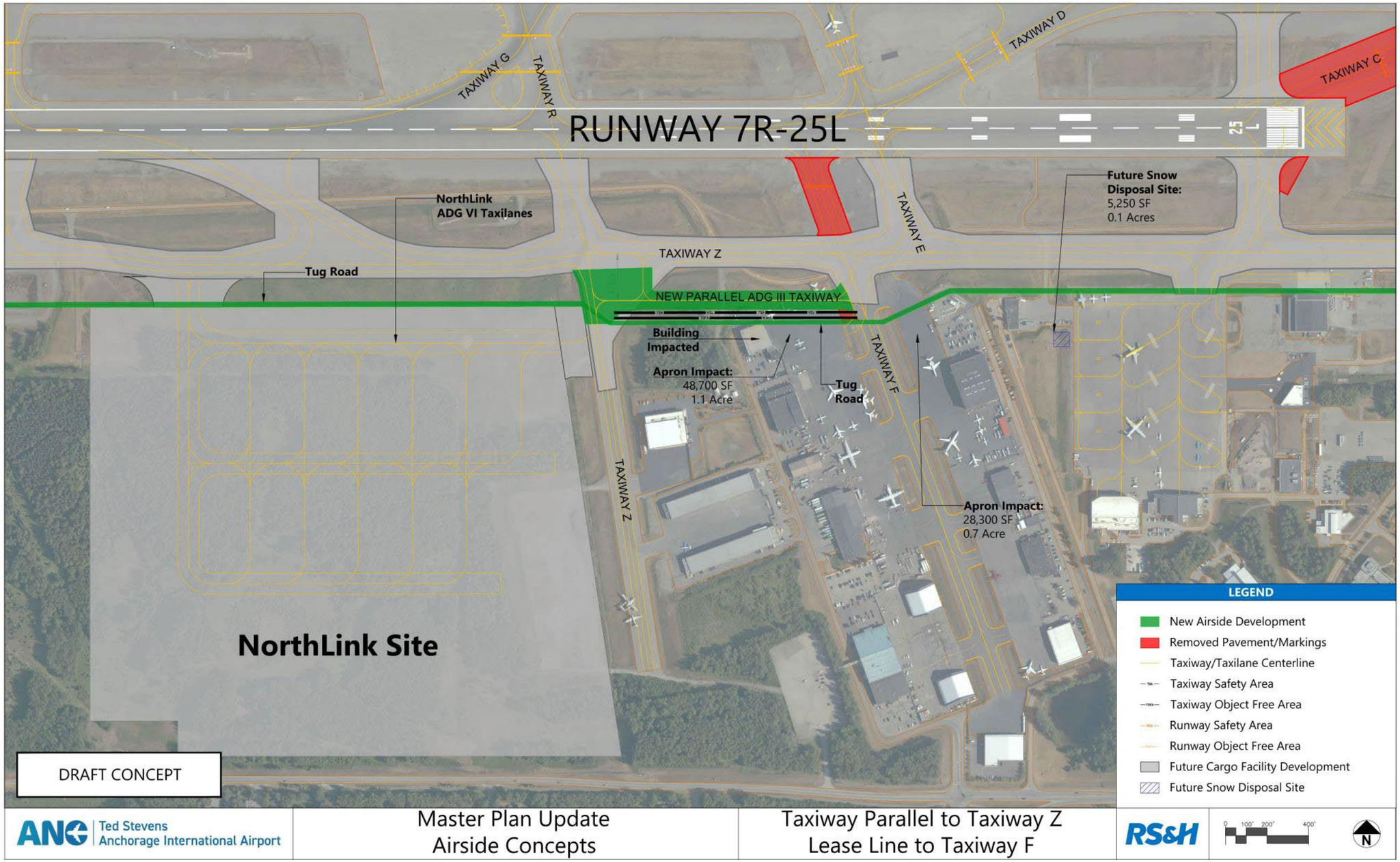
5.2.4.4 South Airpark Taxiway Concept 3

Concept 3 builds upon Concept 2 by proposing the largest extension of the ADG-III parallel taxiway towards the east. In this configuration, the parallel taxiway spans from the NorthLink Site to Taxiway F, then continues eastward before reconnecting with Taxiway Z near the Runway 25L threshold. Unlike Concept 2, the existing entrance to Taxiway F from Taxiway Z would remain open. The tug road in this concept would maintain a parallel alignment with the entire length of the proposed taxiway's TOFA and continue along the same path after the taxiway terminates. South Airpark Taxiway Concept 3 is depicted in **Figure 5-13**.

Like the previous concepts, Concept 3 entails the same apron and building impacts. The extension of the ADG-III parallel taxiway in this concept impacts the existing ARFF Facility and approximately 2.1 acres of the east apron near the Runway 25L threshold. The parallel alignment of the tug road impacts an additional building near the runway threshold. Concept 3 necessitates the most space for future snow disposal, it can still be accommodated within the same designated area as the previous concepts without affecting existing facilities.

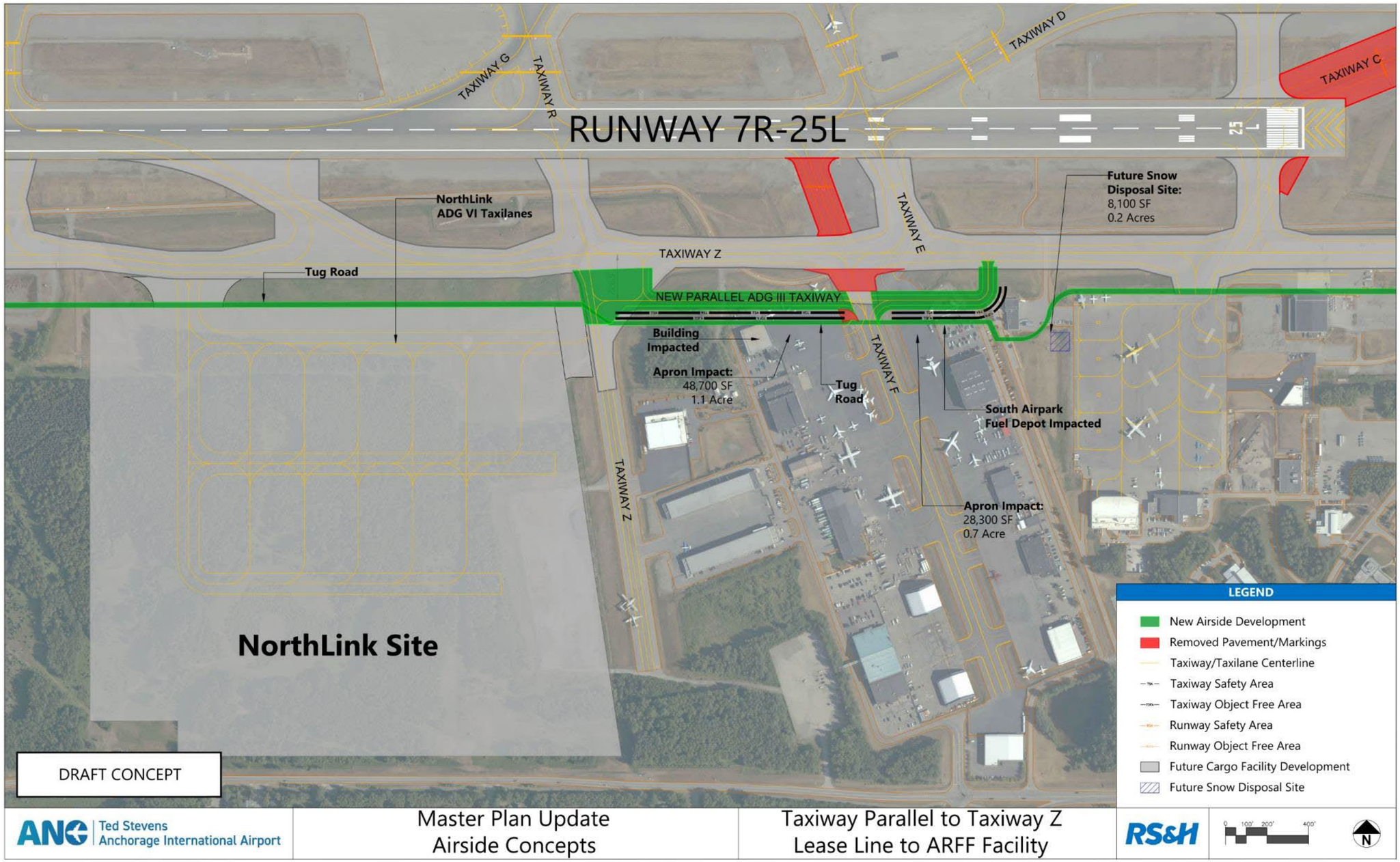
Concept 3 aims to mitigate head-to-head conflicts on Taxiway Z by providing a parallel ADG-III taxiway spanning the entire length of the existing South Airpark aprons and the future NorthLink Site. GA aircraft could access and depart from the aprons via this proposed ADG-III parallel taxiway, bypassing the conflict area near the high-speed exit of Runway 7R. Concept 3 also brings about the most significant impacts among the concepts considered.

Figure 5-11
South Airpark Taxiway Concept 1



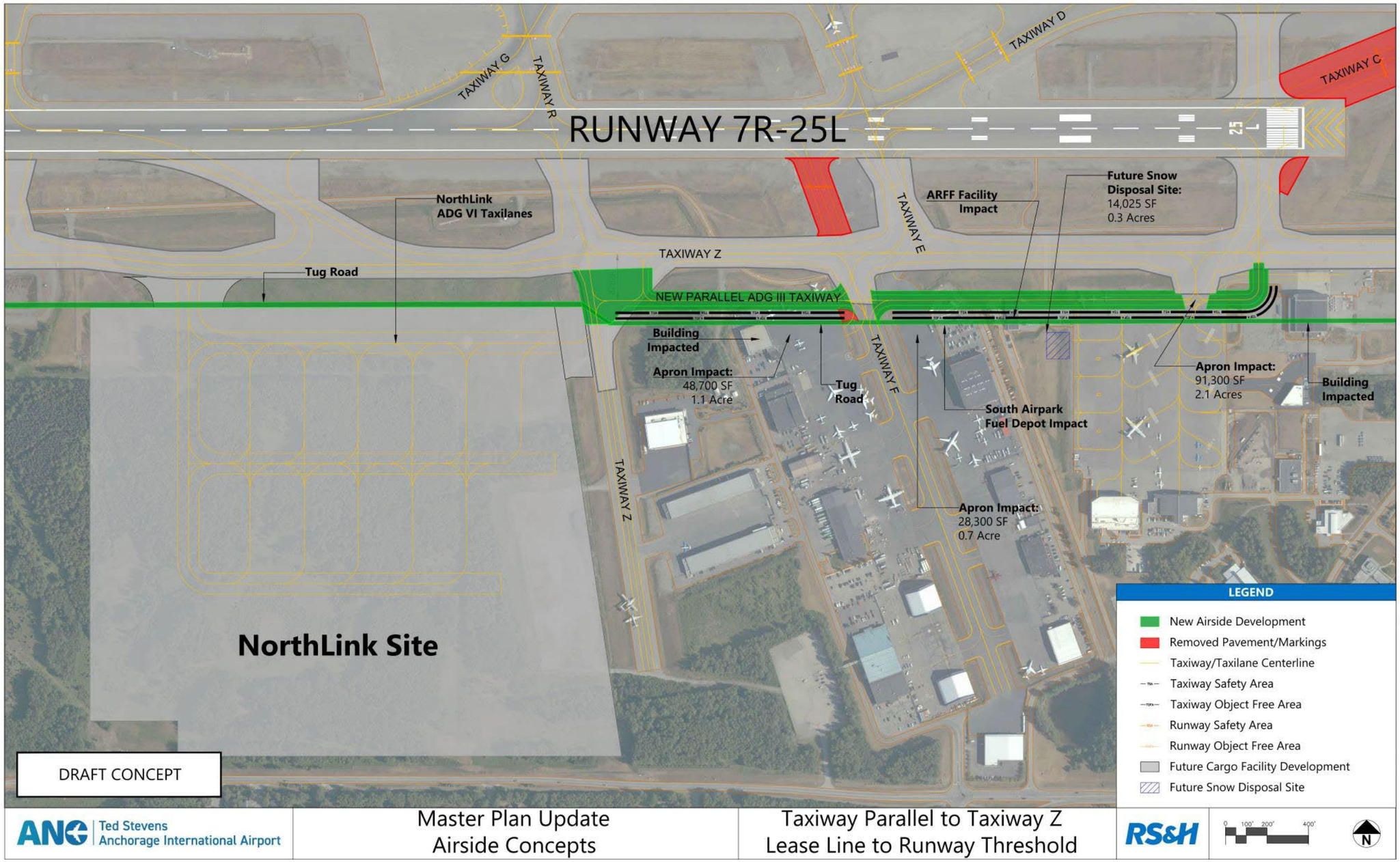
Source: RS&H, 2024

Figure 5-12
South Airpark Taxiway Concept 2



Source: RS&H, 2024

Figure 5-13
South Airpark Taxiway Concept 3



Source: RS&H, 2024

5.2.4.5 South Airpark Taxiway Alternative Refinement

The potential impact to existing leaseholds was used as the primary evaluation criteria to identify if concepts were retained for further refinement. An impact on an existing leasehold would introduce more complexity to the proposed development and may impact tenant operations, so concepts impacting existing leaseholds are not viable. All South Airpark Taxiway Concepts impact existing leaseholds. The leasehold and building for Security Aviation is impacted by all South Airpark Taxiway Concepts, and further leaseholds and property such as the ANC Fire and Safety Station 2 and fuel farm are impacted in these concepts. With these impacts, no concept for the South Airpark Taxiway is further pursued for implementation.

5.2.5 Air Cargo Apron Concepts

Chapter 4, Facility Requirements has identified a substantial increase in the demand for cargo apron and parking facilities, highlighting a deficit in the current Airport-managed parking capacity. This section assesses potential strategies for enhancing current air cargo operations and allocating space to accommodate the projected future demands for cargo apron and parking facilities. The focus area of these concepts is the West Airpark, with the two prospective sites for the concepts being north of Taxiway K near the Runway 7R threshold and the undeveloped area west of Taxiway Y and between the wastewater treatment facility and West End Road. These concepts are geared towards rectifying deficiencies in cargo parking capacity by replacing existing airport-owned "P" parking spots in the North Airpark and existing airport-owned "R" parking spots in the terminal area. The concepts aim to ensure adequate space allocation to meet the future cargo apron and parking requirements.

5.2.5.1 West Airpark Taxiway Y Cargo Apron Concepts

The West Airpark Taxiway Y Cargo Apron Concepts focus on the area west of Taxiway Y in the West Airpark. The concepts explore options for accommodating ADG-VI parking positions in this area, through various configurations and arrangements of aircraft.

Leasehold impact was also a consideration for design criteria, and no concept or alternative extends beyond the Airport property boundary. Below are examples of other criteria that guided alternative evaluation, as well as those outlined in the Goals and Objectives Chapter:

- Efficiency – Is the space optimized well for the volume of aircraft and circulation?
- Impacts on surrounding property - Are the land, facilities, and infrastructure in the area surrounding development impacted?

West Airpark Taxiway Y Cargo Apron Concept 1

The West Airpark Taxiway Y Cargo Apron Concept 1 proposes the construction of a new apron west of Taxiway Y spanning 75 acres. This apron accommodates 15 air cargo tech stop parking

positions. The alternative includes provisions for future development, including an office/pilot services building to the north of the apron and a cargo facility to the south. The airport tug road is proposed to run along the edge of the Taxiway Y TOFA. A 5.5-acre snow disposal site is proposed between the apron and new cargo facility to address future snow disposal requirements. The West Airpark Taxiway Y Cargo Apron Preliminary Alternative is depicted in **Figure 5-14.**

This alternative impacts existing infrastructure within the proposed apron area. Point Woronzof Road, the Remote Transmitter/Receiver (RTR) NAVAID, and Airport Surface Surveillance Capability (ASSC) Tower are currently situated in the footprint of the proposed alternative. Point Woronzof Road would be realigned to the west of the apron, future office/pilot services building, and designated snow disposal site. Both the RTR and ASSC Tower also require relocation.

West Airpark Taxiway Y Cargo Apron Concept 2

The West Airpark Taxiway Y Cargo Apron Concept 2 proposes a new apron to the west of Taxiway Y, smaller in area and in number of parking positions than the previous alternative proposes. This apron accommodates eight air cargo tech stop parking positions. This alternative includes provisions for future development, including ample space for office/pilot services buildings and cargo facilities. The airport tug road is proposed to run along the edge of the Taxiway Y TOFA. The West Airpark Taxiway Y Cargo Apron Concept 2 is depicted in **Figure 5-15**.

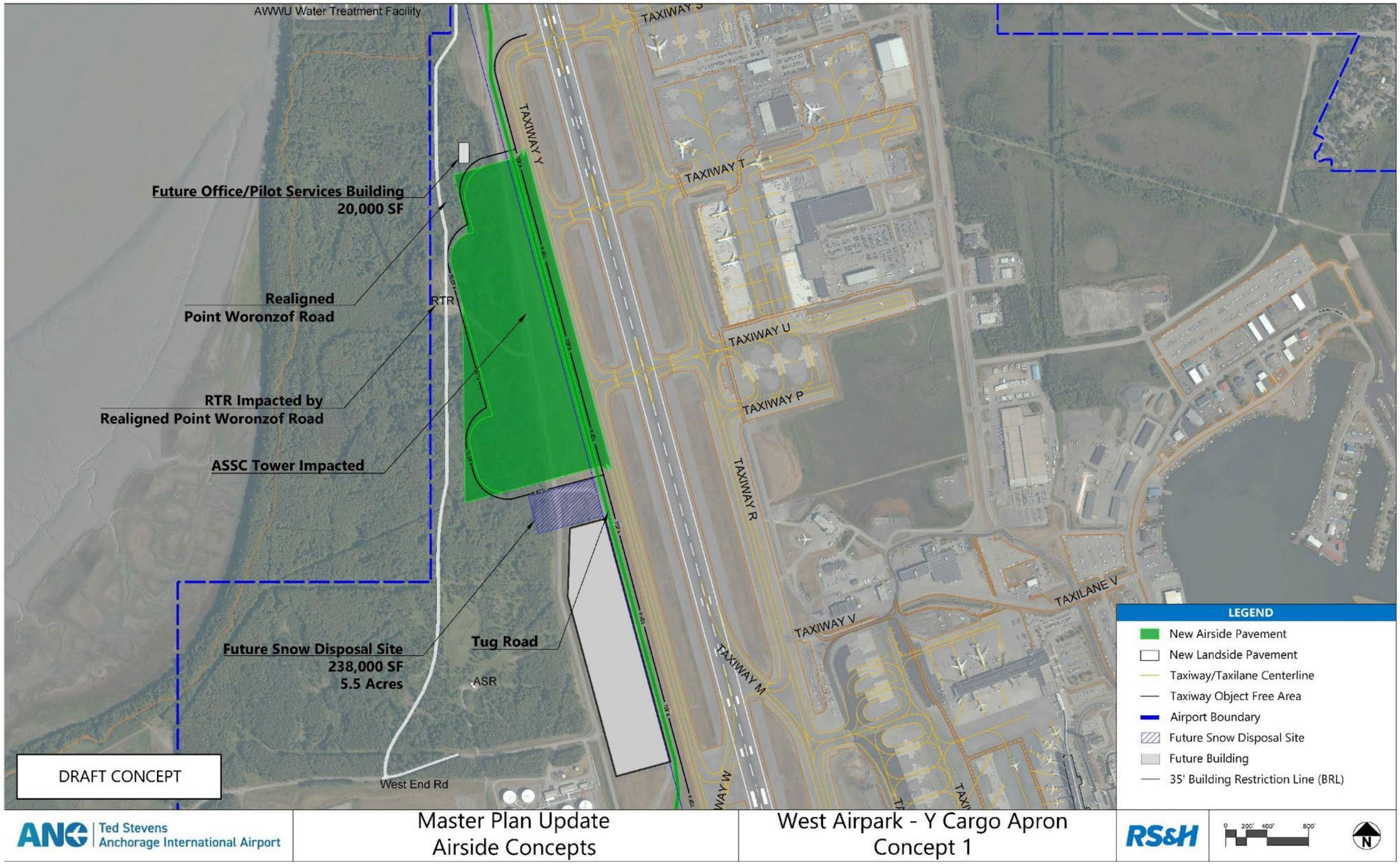
This alternative impacts existing infrastructure within the proposed apron area. Point Woronzof Road, the RTR, and ASSC Tower are all currently situated in the area of the proposed alternative. Point Woronzof road is realigned to the west of the apron. Both the RTR and ASSC Tower also require relocation.

West Airpark Taxiway Y Cargo Apron Concept 3

The West Airpark Taxiway Y Cargo Apron Concept 3 proposes a new apron to the west of Taxiway Y and is the largest of the three concepts. This apron accommodates 19 air cargo tech stop parking positions. This alternative includes provisions for future development, including ample space for office/pilot services buildings and cargo facilities. The airport tug road is proposed to run along the edge of the Taxiway Y TOFA. The West Airpark Taxiway Y Cargo Apron Concept 3 is depicted in **Figure 5-16**.

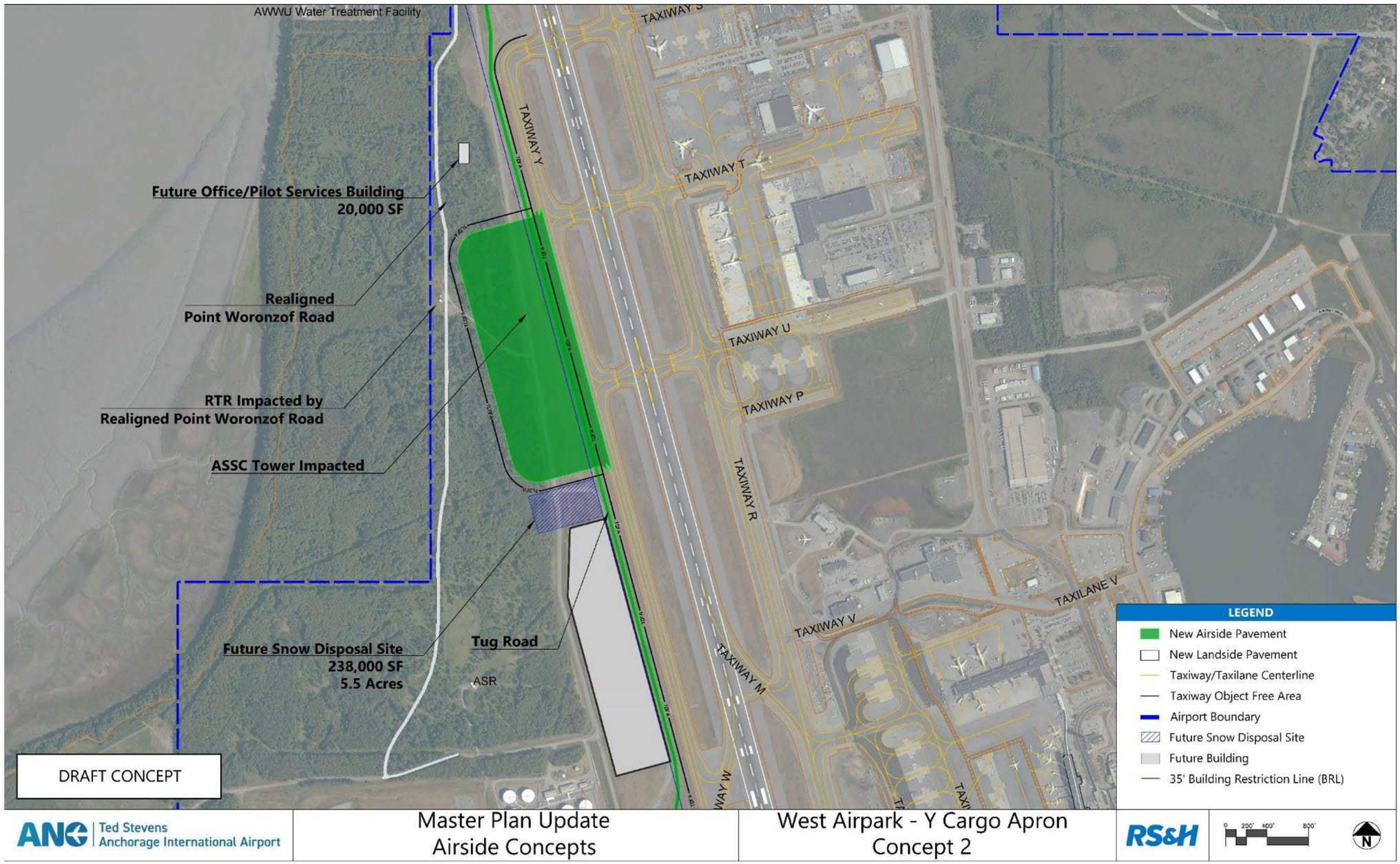
This alternative impacts existing infrastructure within the proposed apron area. Point Woronzof Road, the RTR, and ASSC Tower are all currently situated in the area of the proposed alternative. Point Woronzof road is realigned to the west of the apron. Both the RTR and ASSC Tower also require relocation.

Figure 5-14
West Airpark Taxiway Y Cargo Apron Concept 1



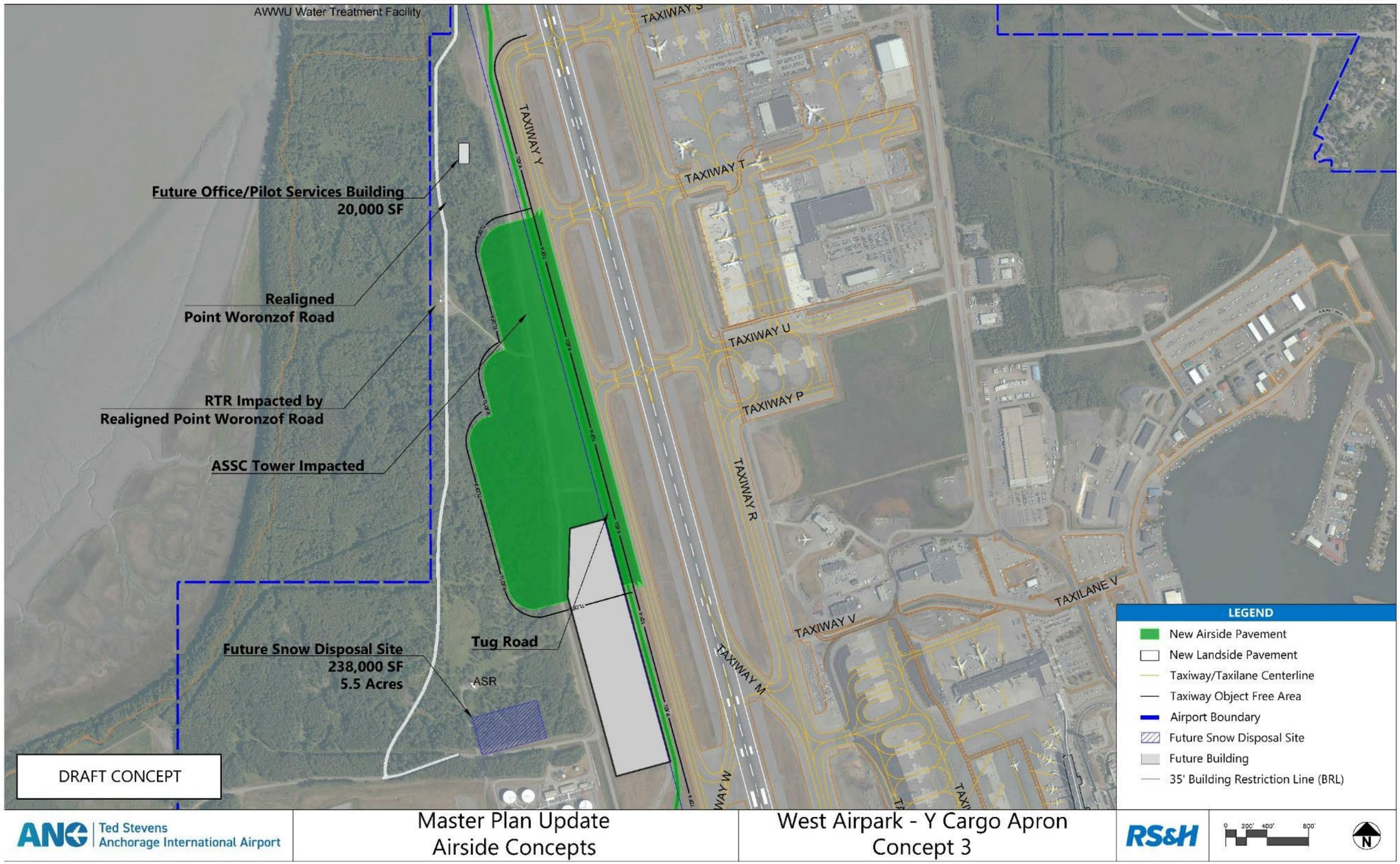
Source: RS&H, 2024

Figure 5-15
West Airpark Taxiway Y Cargo Apron Concept 2



Source: RS&H, 2024

Figure 5-16
West Airpark Taxiway Y Cargo Apron Concept 3



Source: RS&H, 2024

West Airpark Taxiway Y Cargo Apron Refinement Evaluation

The West Airpark Taxiway Y Cargo Apron alternatives evaluation process focuses on if the cargo apron provides adequate aircraft parking capacity for forecasted demand. Each alternative provides variation in how they provide additional tech stop parking capacity to the Airport. The facility requirements analysis determined 15 ADG-VI tech stop positions would be needed over the planning horizon; however, they do not need to be all satisfied in one location, nor will that restrict creating additional capacity for irregular operations (IROPs), temporary snow storage, or capacity requirements increasing faster than forecasted.

The evaluation resulted in the selection of West Apron Taxiway Y Apron Concept 1 as the preferred alternative. The preferred alternative best satisfies the capacity requirement the facility requirements analysis determined, and was also the preferred layout by Airport Staff and stakeholders. This Taxiway Y Cargo Apron Preferred Alternative will be evaluated against the preferred alternative for West Airpark Taxiway K Cargo Apron to determine the final preferred alternative for the cargo apron.

5.2.5.2 West Airpark Taxiway K Cargo Apron Alternatives

The West Airpark Taxiway K Cargo Apron concepts and alternatives focus on the area north of Taxiway K and west of the fuel farm in the West Airpark. Each of these concepts provide different methods of providing 15 ADG-VI parking positions in this area, through various configurations and arrangements of aircraft.

Leasehold impact was also a consideration for design criteria, and none of the alternatives either impede a leasehold or leave the Airport property boundary. Below are examples of other criteria that guided alternative evaluation, as well as those outlined in the Goals and Objectives Chapter:

- Efficiency – Is the space optimized well for the amount of aircraft and circulation?
- Impacts on surrounding property - Are the land, facilities, and infrastructure in the area surrounding development impacted?

West Airpark Taxiway K Cargo Apron Concept 1

Taxiway K Cargo Apron Concept 1 proposes constructing a 72-acre apron north of Taxiway K, which will provide space for 16 RON parking spots. This apron is situated outside the existing runway protection zone (RPZ) of Runway 7L and the ROFA designated for the future 4th runway. Similar to the previous alternative, this concept includes provisions for a future office/pilot services building located west of the proposed apron. A 3.8-acre snow disposal site is proposed east of the apron to accommodate future snow disposal needs. West Airpark Taxiway K Cargo Apron Concept 1 is depicted in **Figure 5-17**.

This concept involves several impacts to existing infrastructure. The proposed apron extends northward into the forested area beyond the current alignment of West End Road, necessitating the realignment of West End Road and earthwork in the affected forested area. The airport tug road is rerouted to run along the edge of the Taxiway K TOFA before reconnecting with the existing road near the Runway 7R end. The air operations area AOA fence requires realignment to ensure it is positioned outside the boundaries of the apron area.

West Airpark Taxiway K Cargo Apron Concept 2

West Airpark Taxiway K Cargo Apron Concept 2 involves constructing a 62.2-acre apron designed to accommodate a total of 15 RON parking spots. One segment of the apron, located north of Taxiway K, would accommodate 12 RON parking spots, while another segment west of Taxiway J would accommodate three RON parking spots. This concept proposes a future office/pilot services building situated between the two segments of the proposed apron. To address future snow disposal needs, a 3.3-acre snow disposal site is planned east of the apron. West Airpark Taxiway K Cargo Apron Concept 2 is depicted in **Figure 5-18**.

This concept has the same impacts as Concept 1. West End Road requires realignment, and earthwork is necessary in the area where the apron extends beyond the road's current alignment. The tug road has the same realignment seen in Concept 1, being rerouted to run along the edge of the Taxiway K TOFA before reconnecting near the Runway 7R end. The AOA fence must be realigned to ensure it remains outside the boundaries of the apron area.

West Airpark Taxiway K Cargo Apron Concept 3

West Airpark Taxiway K Cargo Apron Concept 3 takes a similar approach to Concept 2, where the proposed apron expands both north of Taxiway K and west of Taxiway J. However, in this concept, the aprons are connected rather than being two separate segments that split at the edge of Taxiway J. The proposed apron spans 69.1 acres and accommodates 15 RON spots. As with the other concepts, there is a plan for a future office/pilot services building situated west of the proposed apron. A 3.6-acre snow disposal site is designated east of the apron to meet future snow disposal needs. The West Airpark Taxiway K Cargo Apron Concept 3 is depicted in **Figure 5-19**.

Unlike the previous concepts, the proposed apron in this concept does not extend north beyond West End Road. Therefore, realignment of the road and earthwork in the forested area north of the road are not necessary. The airport tug road follows the same realignment path as in the previous concepts, running along the edge of the Taxiway K TOFA before reconnecting near the Runway 7R end. The AOA fence requires realignment to ensure it remains outside the boundaries of the apron area.

West Airpark Taxiway K Cargo Apron Concept 4

West Airpark Taxiway K Cargo Apron Concept 4 retains a layout similar to the preliminary alternative but introduces a new taxiway to enhance access from Taxiway K to Runway 7R. This involves extending Taxiway K westward and proposing a connector taxiway at the Runway 7R end. The total area covered by the proposed apron and taxiway pavement is 75.9 acres, accommodating a total of 15 RON parking spots. Of these, 12 spots are situated in the northern section of the apron north of Taxiway K, while 3 spots are located in the western segment west of Taxiway J. A future office/pilot services building is planned between these two apron segments. To address future snow disposal needs, a 4-acre snow disposal site is proposed east of the apron. West Airpark Taxiway K Cargo Apron Concept 4 is depicted in **Figure 5-20**.

This concept sees the same impacts outlined in the preliminary alternative. West End Road remains in its current alignment, and no earthwork is necessary in the adjacent forested area. The airport tug road follows the same realignment route as in previous concepts, running alongside the Taxiway K TOFA before reconnecting near the Runway 7R end. The AOA fence requires adjustment to ensure it remains outside the boundaries of the apron area. Additionally,

in this concept, the construction of new taxiways and the western portion of the apron affect the existing ALSF shelter, necessitating its relocation.

West Airpark Taxiway K Cargo Apron Concept 5

West Airpark Taxiway K Cargo Apron Concept 5 proposed the construction of a 71-acre apron north of Taxiway K, providing space for 15 air cargo tech stop parking positions. A future office/pilot services building is situated west of the new apron. To address future snow disposal needs, a 4-acre snow disposal site is designated west of the new apron, located above the future office/pilot services building. West Airpark Taxiway K Cargo Apron Concept 5 is depicted in **Figure 5-21**.

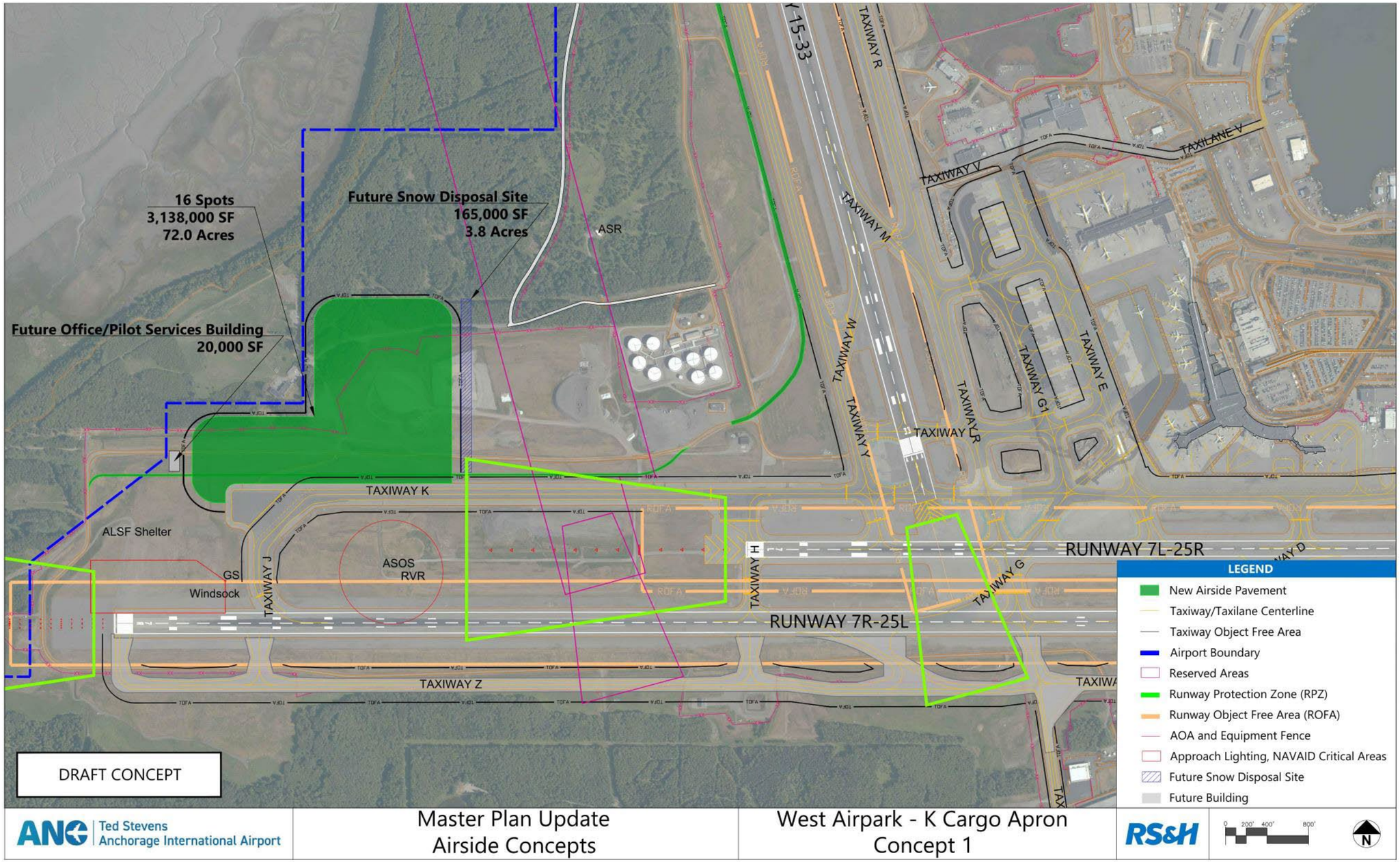
This concept shares similar impacts with previous concepts. West End Road requires realignment due to the apron's northward expansion, necessitating earthwork where the apron extends beyond the road's current alignment. The scope of earthwork is greater in Concept 5 compared to previous concepts, given the apron's expansion north of Taxiway K only. The airport tug road is rerouted to follow the edge of Taxiway K's TOFA before reconnecting with the existing road near the Runway 7R end. The AOA fence needs adjustment to ensure it remains outside the apron area boundaries.

West Airpark Taxiway K Cargo Apron Concept 6

West Airpark Taxiway K Cargo Apron Concept 6 proposes the construction of a 72-acre apron north of Taxiway K, providing space for 16 air cargo tech stop parking positions. Unlike previous concepts, Concept 6 features an apron that is accessed via a connector taxiway from Taxiway K rather than directly connected. The apron expansion is limited to the north, with no planned development west of Taxiway J. A future office/pilot services building is situated west of the new apron. To address future snow disposal needs, a 4-acre snow disposal site is designated west of the new apron, located above the future office/pilot services building. West Airpark Taxiway K Cargo Apron Concept 5 is depicted in **Figure 5-22**.

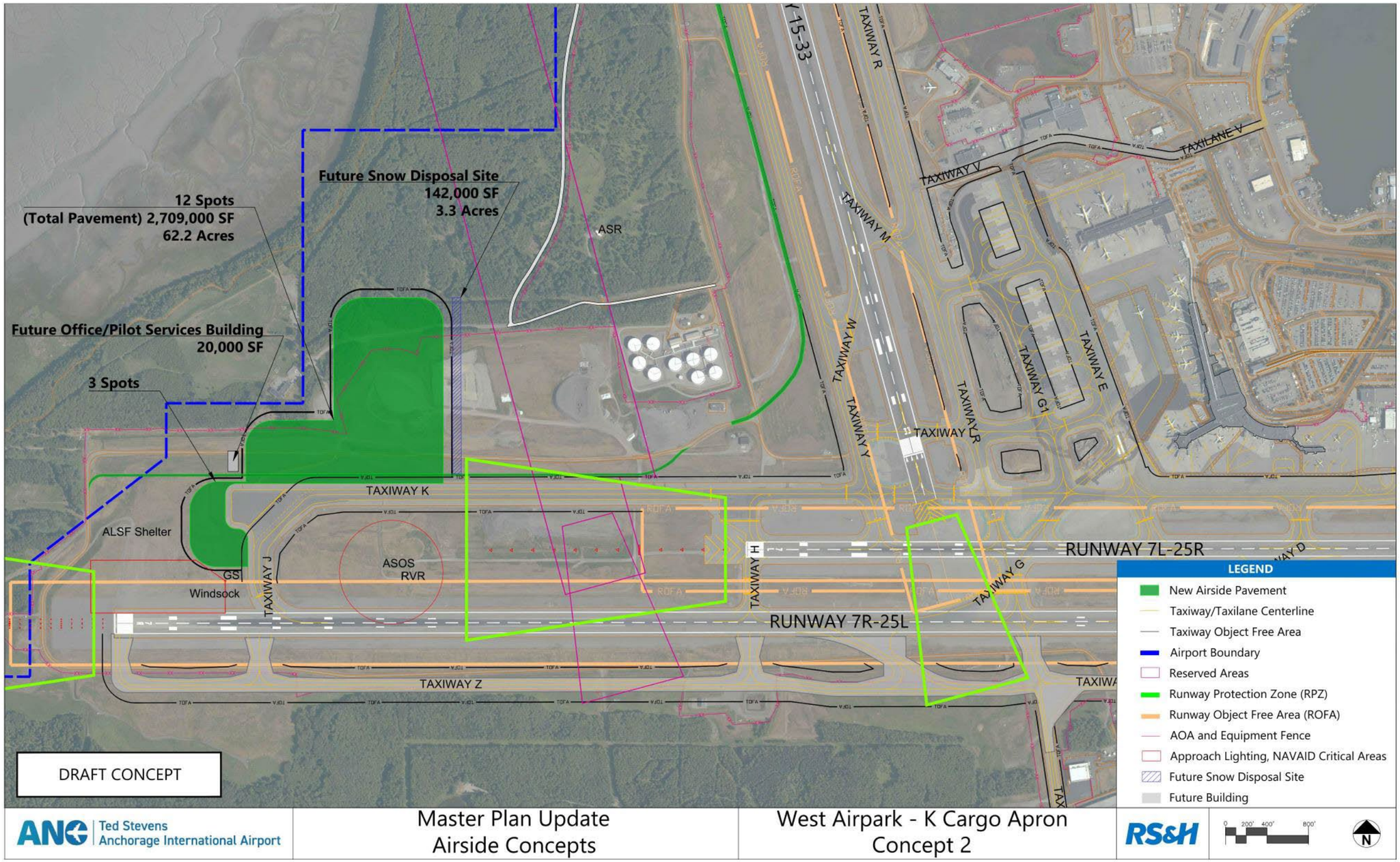
This concept shares similar impacts with previous concepts. West End Road requires realignment due to the apron's northward expansion, necessitating earthwork where the apron extends beyond the road's current alignment. The scope of earthwork is greater in Concept 6 compared to previous concepts, given the apron's expansion farther north than any other concept. The airport tug road is rerouted to follow the edge of Taxiway K's TOFA before reconnecting with the existing road near the Runway 7R end. The AOA fence needs adjustment to ensure it remains outside the apron area boundaries.

Figure 5-17
West Airpark Taxiway K Cargo Apron Concept 1



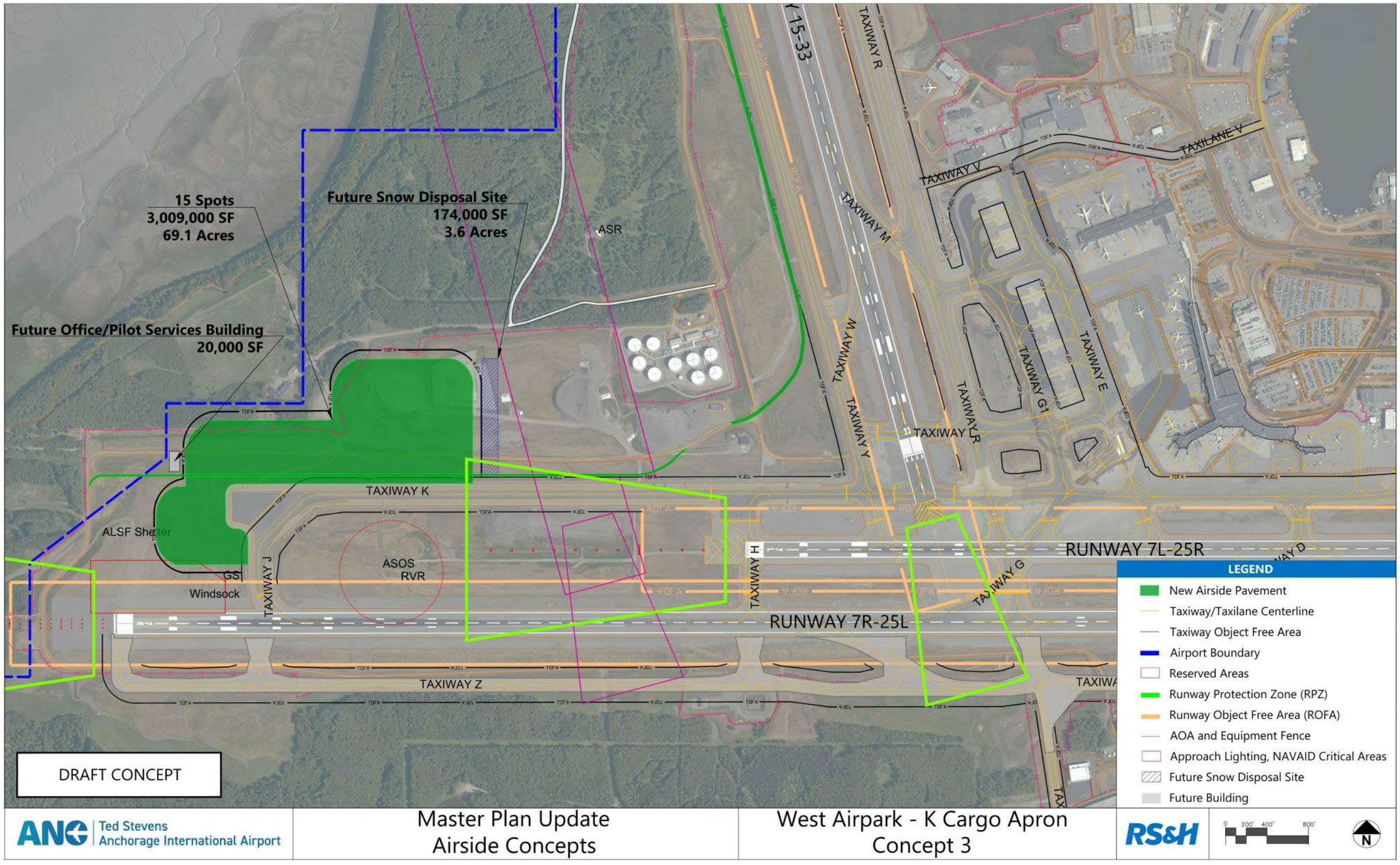
Source: RS&H, 2024

Figure 5-18
West Airpark Taxiway K Cargo Apron Concept 2



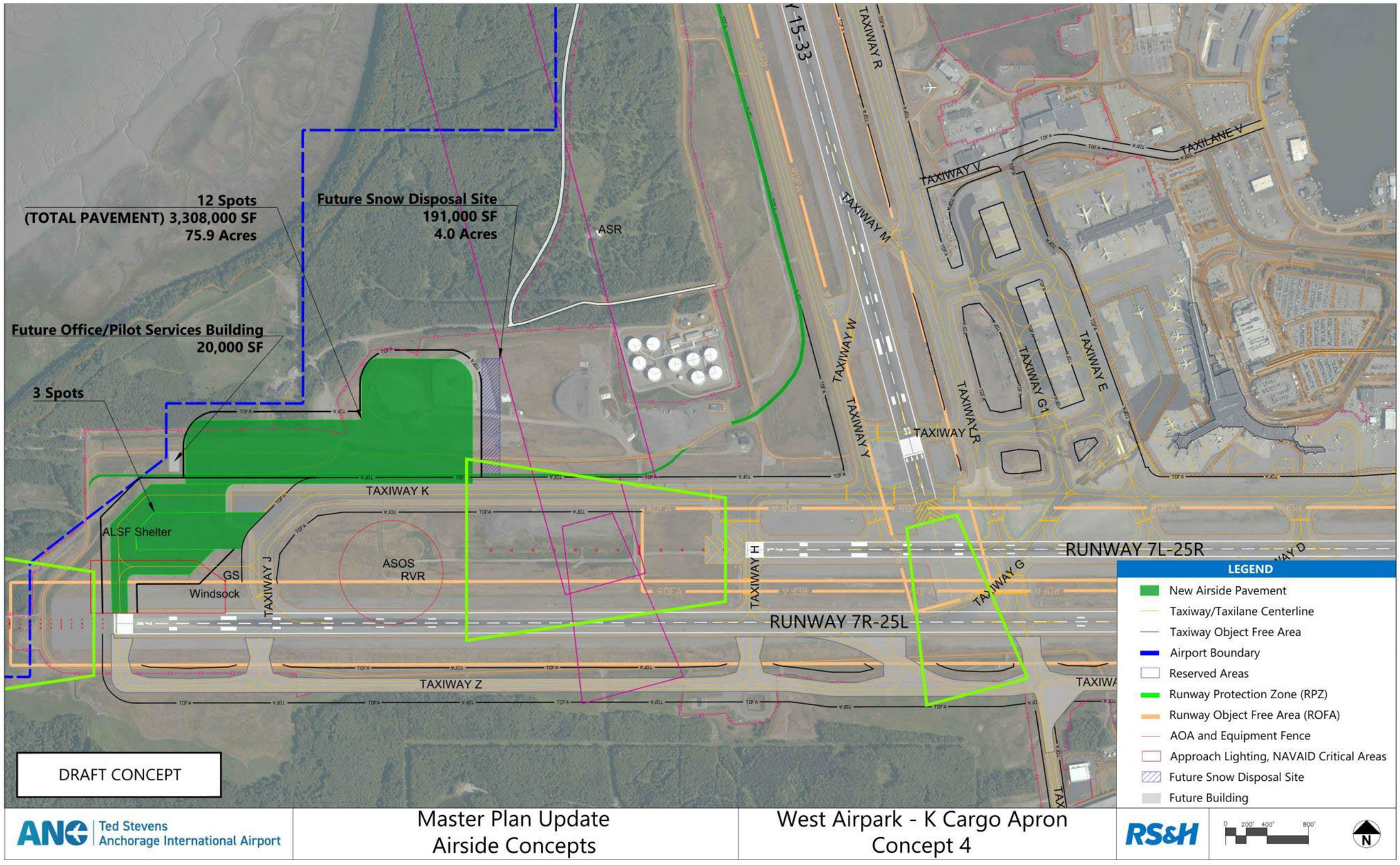
Source: RS&H, 2024

Figure 5-19
West Airpark Taxiway K Cargo Apron Concept 3



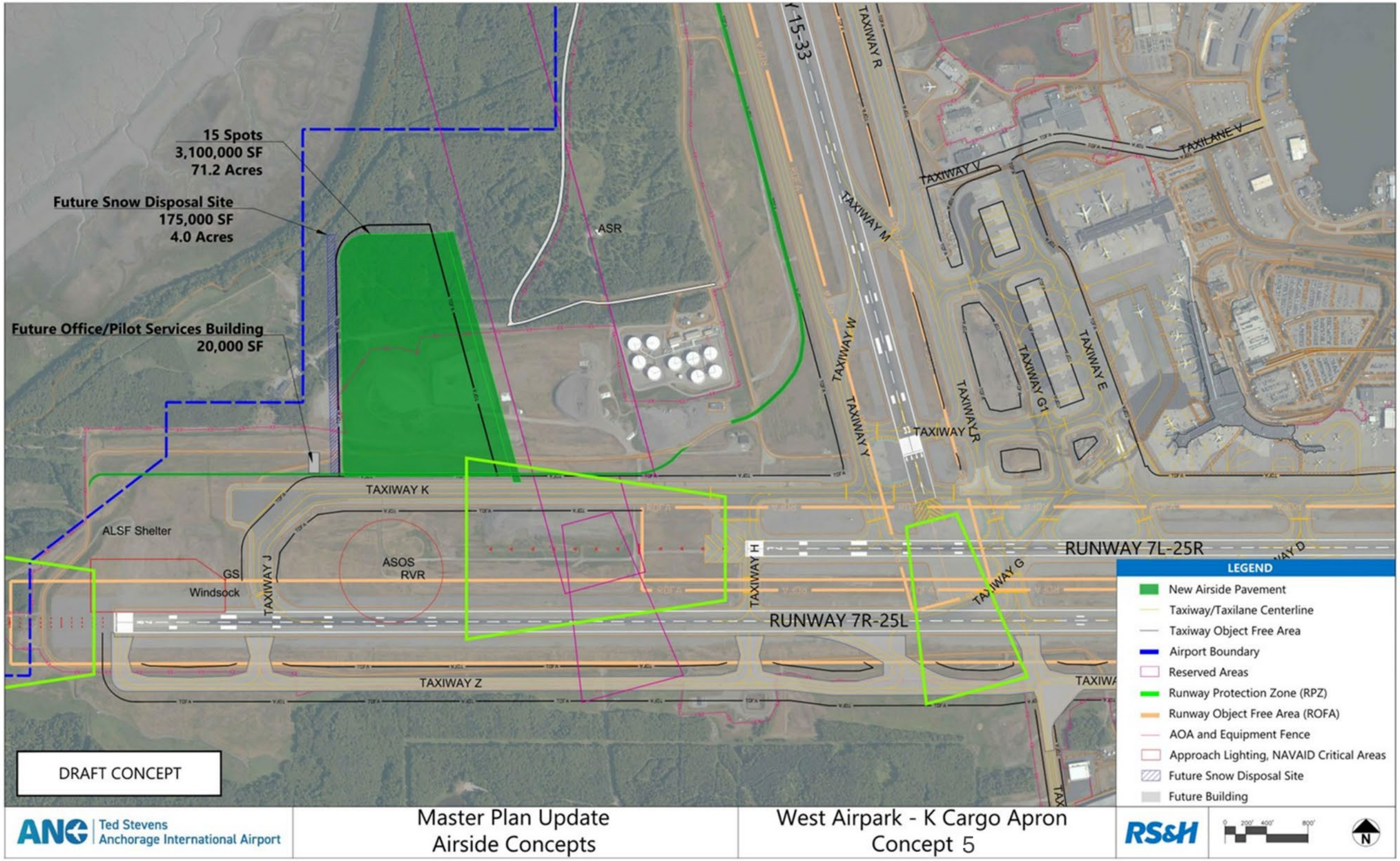
Source: RS&H, 2024

Figure 5-20
West Airpark Taxiway K Cargo Apron Concept 4



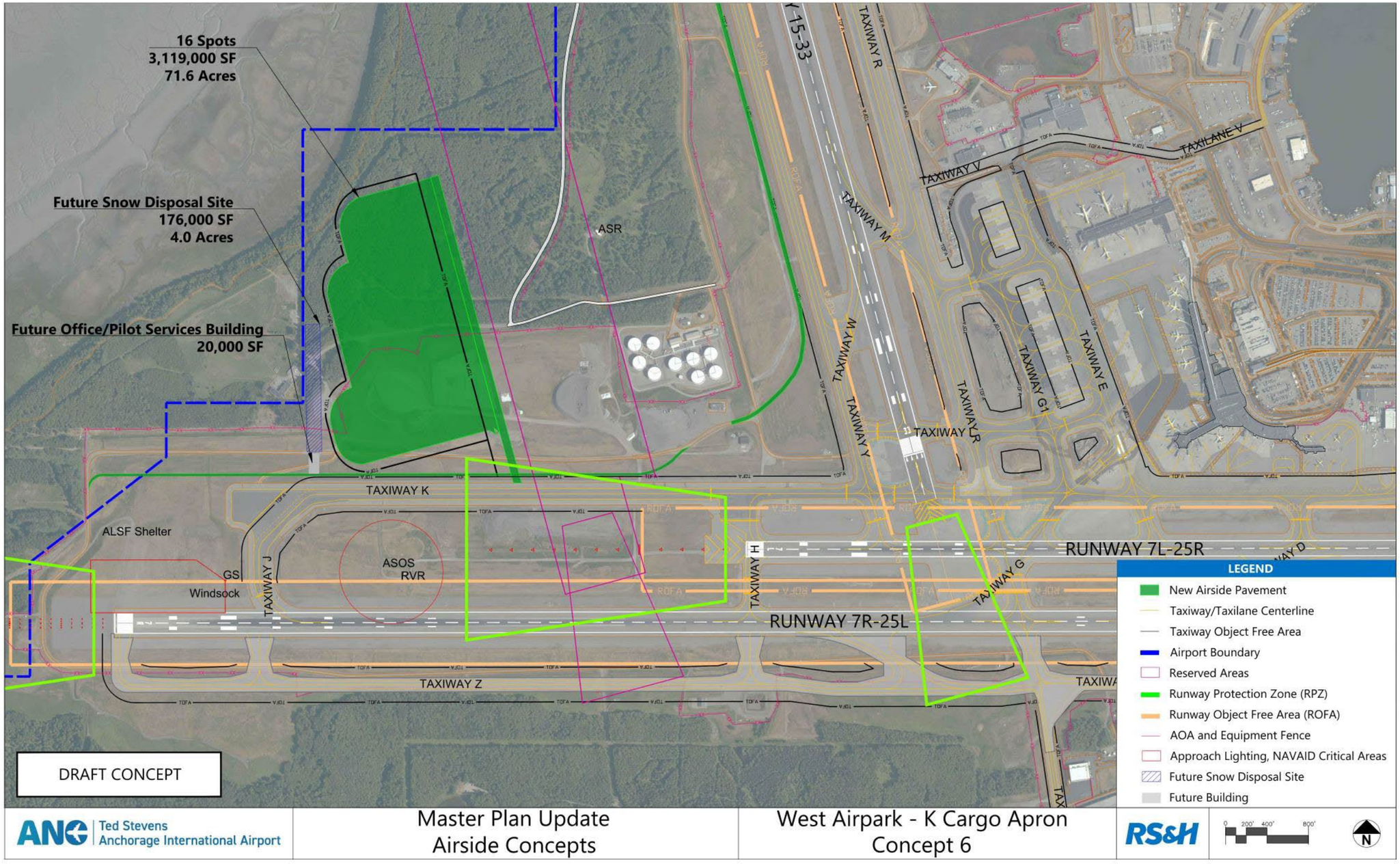
Source: RS&H, 2024

Figure 5-21
West Airpark Taxiway K Cargo Apron Concept 5



Source: RS&H, 2024

Figure 5-22
West Airpark Taxiway K Cargo Apron Concept 6



Source: RS&H, 2024

West Airpark Taxiway K Cargo Apron Concept Refinement Evaluation

The West Airpark Taxiway K Cargo Apron evaluation process was completed in two phases – primary evaluation and secondary evaluation. This two-phased methodology allows the evaluation process to first determine if there are any alternatives that do not meet the primary objectives, at a high level, before undertaking a more detailed evaluation. The West Airpark Taxiway K Cargo Apron concept evaluation was completed by the Master Plan team in coordination with Airport staff to identify the Preferred West Airpark Taxiway K Cargo Apron Alternative, which would later be evaluated against the Preferred West Airpark Taxiway Y Cargo Apron Alternative. This evaluation was outlined by the goals and objectives established in the Goals and Objectives Chapter, as well as more specific items within each category in the Chapter.

The primary evaluation process begins with all seven West Airpark Taxiway K Cargo Apron concepts. The goal of the primary evaluation is to determine which of the seven concepts meets the primary objectives and withdraw the other alternatives from further consideration.

The primary evaluation includes three criteria which represent the primary objectives, as described below:

- Concept does not unduly restrict access to existing West Airpark facilities by impacting West End Road.
- Concept does not majorly impact land with existing mature vegetation.

The first objective is reflective of the Airport's respect of surrounding facilities, as an impact on West End Road would impede access to facilities owned by the Municipality of Anchorage in the West Airpark and would require a rerouting of West End Road. This should be avoided as to disrupt surrounding organizations and facilities as little as possible.

The second objective represents minimization of many impacts. First, areas with mature vegetation in the West Airpark tend to have unlevel grades, meaning lots of earthwork would be required for a level grade apron and safety areas. Earthwork, particularly in coastal Anchorage, can be expensive, so avoiding heavy earthwork is a good standard practice. Second, areas with mature vegetation are prime habitats for wildlife. Reduction of wildlife habitat impact should be sought to ensure the Airport remains a responsible steward of the land it is on, while also aligning with established Goals and Objectives. Finally, areas with mature vegetation would provide a screen to reduce visibility and noise of the airport environment from users of the Tony Knowles Coastal Trail. This trail is valuable to the Anchorage community, and impact on this facility should be reduced as much as practical.

Each concept was evaluated against the criteria on a pass/fail scale of measurement. A "pass" results if the concept satisfies both criteria. A Fail results if the alternative does not satisfy one or both criteria which eliminates the concept from further consideration.

The primary evaluation for West Airpark Taxiway K Cargo Apron concepts are described in **Table 5-1**. Concepts 2, 4, 5, and 6 do not satisfy either of the Primary Evaluation criteria, as each of these concepts impact the West End Road and would require the road to be rerouted, and both would have a major, multi-acre impact on land with mature vegetation. Therefore, these concepts were withdrawn from further consideration. The Concept 1 and 3 satisfy all three primary evaluation criteria, and were retained for secondary evaluation.

Table 5-1
West Airpark Taxiway K Cargo Apron Primary Evaluation Results

Criteria	Concept 1	Concept 2	Concept 3	Concept 4	Concept 5	Concept 6
Impact on West End Road	✓	✗	✓	✗	✗	✗
Impact on Land with Mature Vegetation	✓	✗	✓	✗	✗	✗
Alternative Retained for Further Consideration	✓	✗	✓	✗	✗	✗

Note: Cells with blue background indicate concepts that satisfy all primary evaluation criteria and proceed to secondary evaluation.
Source: RS&H, 2024.

The West Airpark Taxiway K Cargo Apron evaluation continues with the Concept 1 and Concept 3 in a secondary evaluation process. The goal of the secondary evaluation is to determine which of the remaining concepts best satisfies the long-term needs of the Airport and can serve as the West Airpark Taxiway K Cargo Apron Preferred Alternative.

The secondary evaluation criteria is based on land management. The land management criteria are the following:

- Acres of apron pavement per aircraft parking position
- Impact on airport facilities and NAVAIDs

Each secondary evaluation category includes measurable criterion that evaluate specific potential impacts and factors important to the Airport.

Acres of apron pavement per aircraft parking positions, an efficiency related criteria, measures how effectively the land is used for the aircraft that are utilizing the position. The more acres of apron pavement per aircraft parking position are needed, the less efficient with land use the

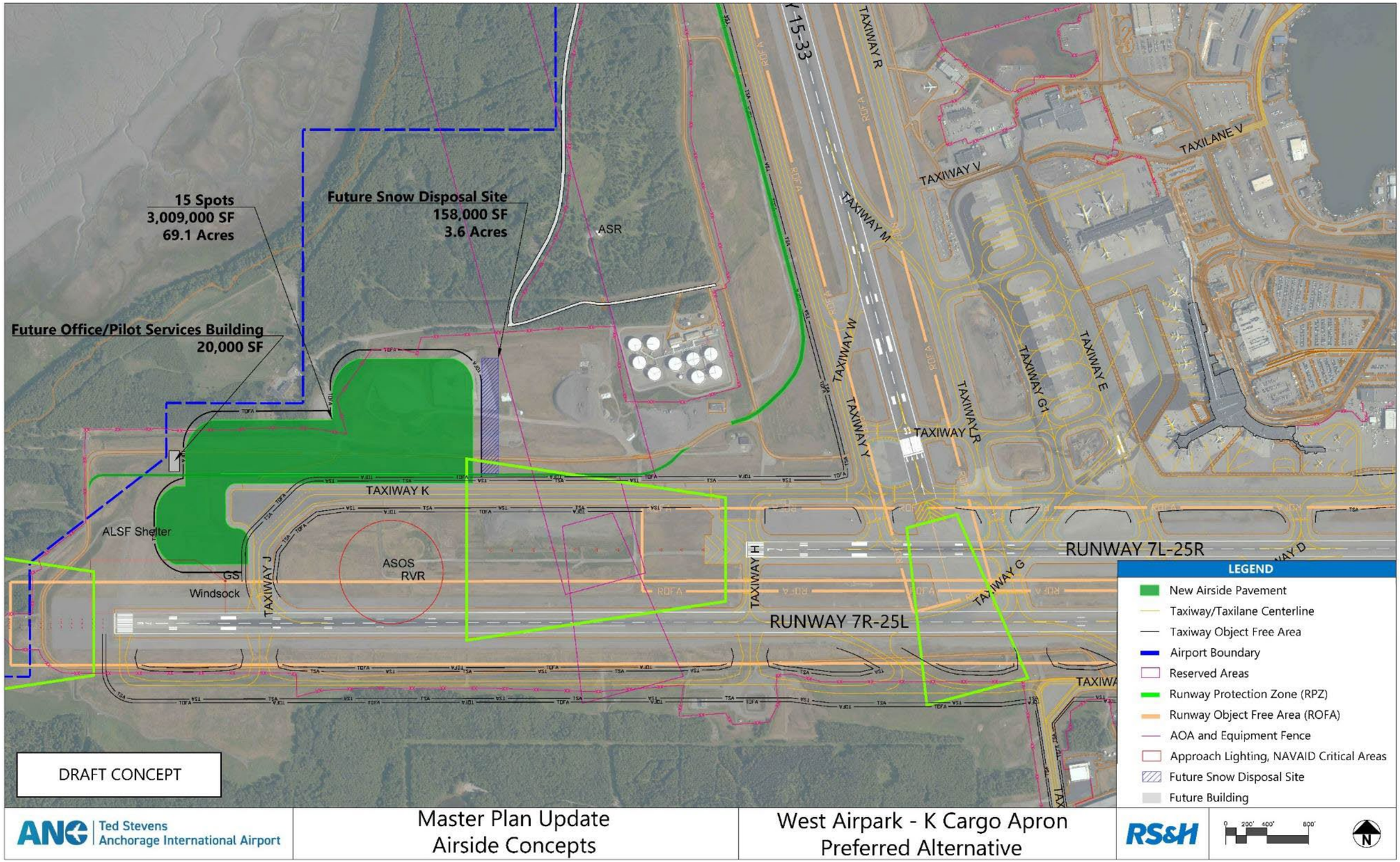
concept is. The more efficient an alternative is, the likelier it will be to be less negatively economically and ecologically impactful.

The average acres of apron pavement per aircraft parking position for Concept 1 is approximately 4.6 acres/position, as opposed to the approximately 5.1 acres/position of Concept 3. Concept 1 is more efficient with its land use.

The impact on airport facilities and NAVAIDs with Concept 1 is much smaller than Concept 3; however, not all impacts on airport facilities and NAVAIDs are negative. A positive impact to airport facilities that Concept 3 makes is Taxiway Z1 extends north past the west threshold of Runway 7R to intersect with an extended Taxiway K. This would also introduce additional costs for taxiway construction if implemented. This promotes airport circulation and access. Conversely, Concept 3 impacts the glideslope critical area much more than the Concept 1, which only has a minor TOFA penetration. In addition, Concept 3 is the only alternative of the two that will develop over the current footprint of the Approach Lighting System with Sequenced Flashing Lights (ALSF) shelter building. Concept 1 provides less of an impact on airport facilities and NAVAIDs.

The secondary evaluation demonstrates the West Airpark Taxiway K Cargo Apron Concept 1 is the preferred concept for both criteria categories and is selected to be the West Airpark Taxiway K Cargo Apron Preferred Alternative, depicted in **Figure 5-23**.

Figure 5-23
Preferred Alternative K Cargo Apron



Source: RS&H, 2024

5.2.5.3 West Airpark Cargo Apron Preferred Alternative Refinement Evaluation

The West Airpark Cargo Apron preferred alternative refinement evaluation is conducted to determine which of the two alternatives, the Taxiway Y Cargo Apron alternative or Taxiway K Cargo Apron alternative, satisfy the cargo apron criteria to the best degree. These evaluation criteria encompass the relevant Goals and Objectives to ensure the vision of the Airport and its stakeholders is being met through this evaluation process.

The evaluation criteria for the preferred alternatives are organized into 3 categories:

- Airside Access
- Landside Access
- Tower Visibility

Each evaluation category includes measurable criterion that evaluate specific potential impacts and factors important to the Airport its users.

Both alternatives access the airfield via a parallel taxiway to one of the Airport's runways. This promotes timely and efficient exit and entry of the apron and to access the airfield; however, the Taxiway Y Cargo Apron alternative is sited in an area much closer to cargo carriers and the existing RON positions in the terminal area. The Taxiway K Cargo Apron alternative's siting at Taxiway K is easier to access without crossing a runway for aircraft in the center area of the Airport. In consideration of each alternative's siting and accessibility, the Taxiway Y Cargo Apron satisfies the airside access criteria better than the Taxiway K Cargo Apron.

The landside interfaces for both alternatives is yet to be implemented, and are included with each alternative's design assumptions. Each alternative would require changes to existing roadways, additional roadways to be designed and constructed, staff and crew facilities, ground vehicle parking and circulation, and fueling infrastructure for aircraft. the only substantive difference between each alternative is the amount of roadway to be designed and constructed, and by result how far away the facility is from Anchorage via roadways. The Taxiway Y Cargo Apron alternative is closer to Anchorage via Point Woronzof Road than the Taxiway K Cargo Apron alternative, which would require less roadway to be designed and implemented and for a shorter commute for users of the facility.

Airport Traffic Control Tower (ATCT) visibility is important for facilities at ANC, as it ensures proper coordination of operations, safety, and efficiency. The proposed ATCT facility that the FAA is currently in the initial phases of designing is a new, taller tower that would replace the functions of the current ATCT. This proposed facility is expected to be over 300 feet tall,

improving visibility throughout the Airport. The Taxiway Y Cargo Apron alternative is closer to the proposed ATCT facility site than the Taxiway K Cargo Apron alternative, although neither is expected to have visibility concerns from the tower cab.

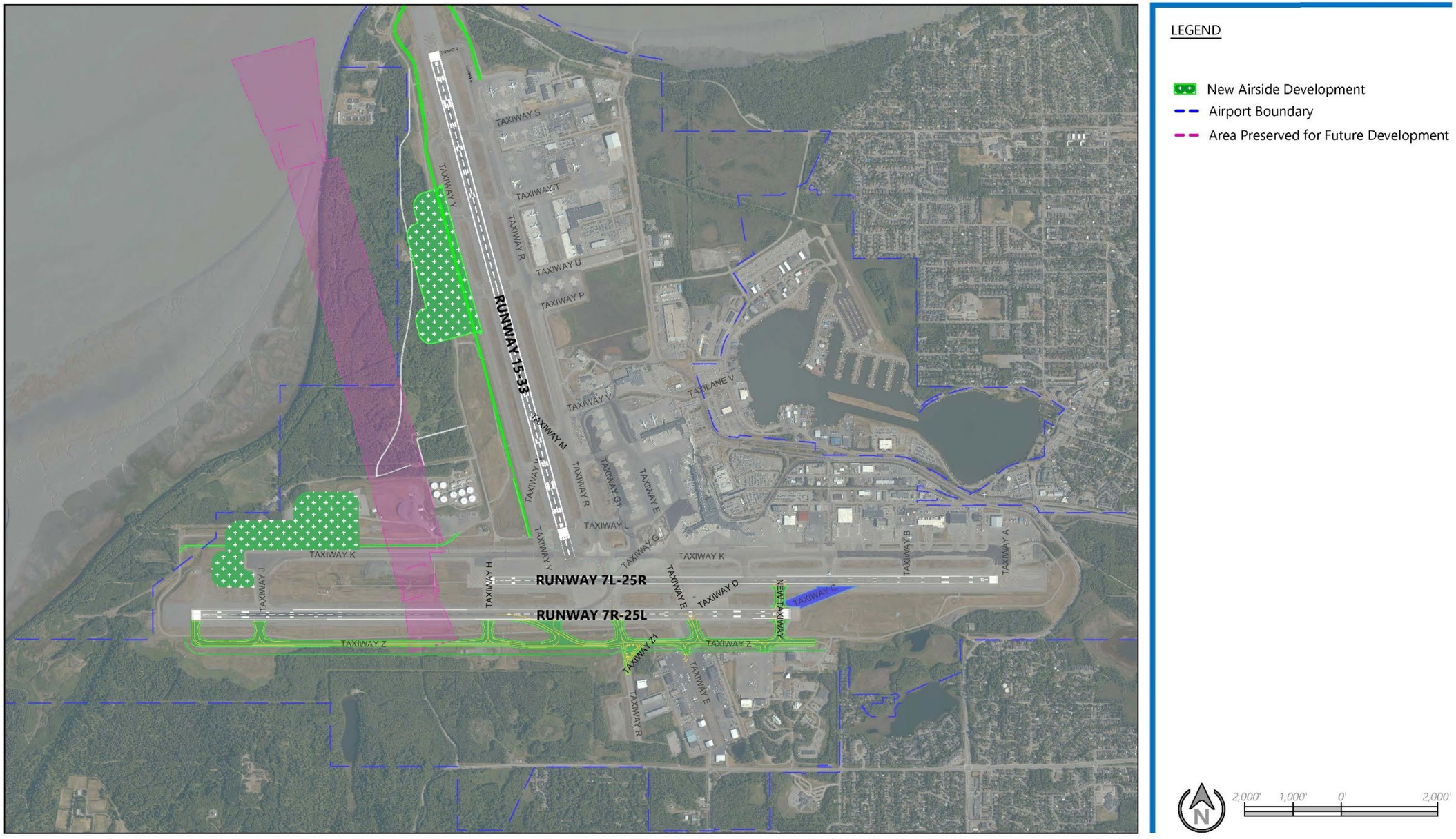
5.2.5.4 Preferred West Airpark Cargo Apron Alternative

The result of the alternatives evaluation determined the Taxiway Y Cargo Apron as the preferred alternative, due to its proximity to the terminal apron and cargo operators in the North Airpark, better proximity to existing landside infrastructure on Point Woronzof Road, and better visibility to the proposed new ATCT site.

Although not selected as the preferred alternative, the Taxiway K Cargo Apron alternative remains a viable site for both Airport and tenant development in the future when the need arises. The Taxiway Y Cargo Apron has evolved from the role of a solely Airport-managed apron to a mixed Airport-managed and tenant-managed area. This flexibility in development may drive the implementation of the Taxiway K Cargo Apron alternative when the need arises. The Master Plan recommends that the Taxiway Y Cargo Apron and Taxiway K Cargo Apron are both selected as preferred alternative areas, as they provide the greatest operational and development flexibility to meet the changing and growing needs of the Airport and its operators. It is recommended that the Taxiway Y Cargo Apron area be developed first, then the Taxiway K Cargo Apron following the prior development. This preferred alternative is depicted in **Figure 5-24**.

At of the time of this Chapter's drafting (early 2025), further developments have been proposed for the Taxiway Y Cargo Apron site. The Airport has recently proposed the construction of a cargo apron containing four Airport-Managed ADG-VI parking positions. This apron is located on the west side of the Taxiway Y, between Taxiway T and Taxiway U, with these positions being both power-through capable and in a wingtip to wingtip parking configuration. In the area south of this proposed development, an undetermined number of tenant-developed aircraft parking positions are planned to be developed, further expanding airport parking capacity. The approximate extents of this proposed development span from the Airport-managed Taxiway Y Cargo Apron positions, south to the extent of the proposed fuel farm development, east to Taxiway Y, and west to the Airport perimeter. This configuration is not depicted in Figure 5-24 as it was not part of the evaluation process; however, will be included in all other preferred alternative figures as it will be the alternative that will undergo implementation.

Figure 5-24
Cargo Apron Preferred Alternative



Source: RS&H, 2024

5.2.6 Airfield Flow Optimization Alternatives

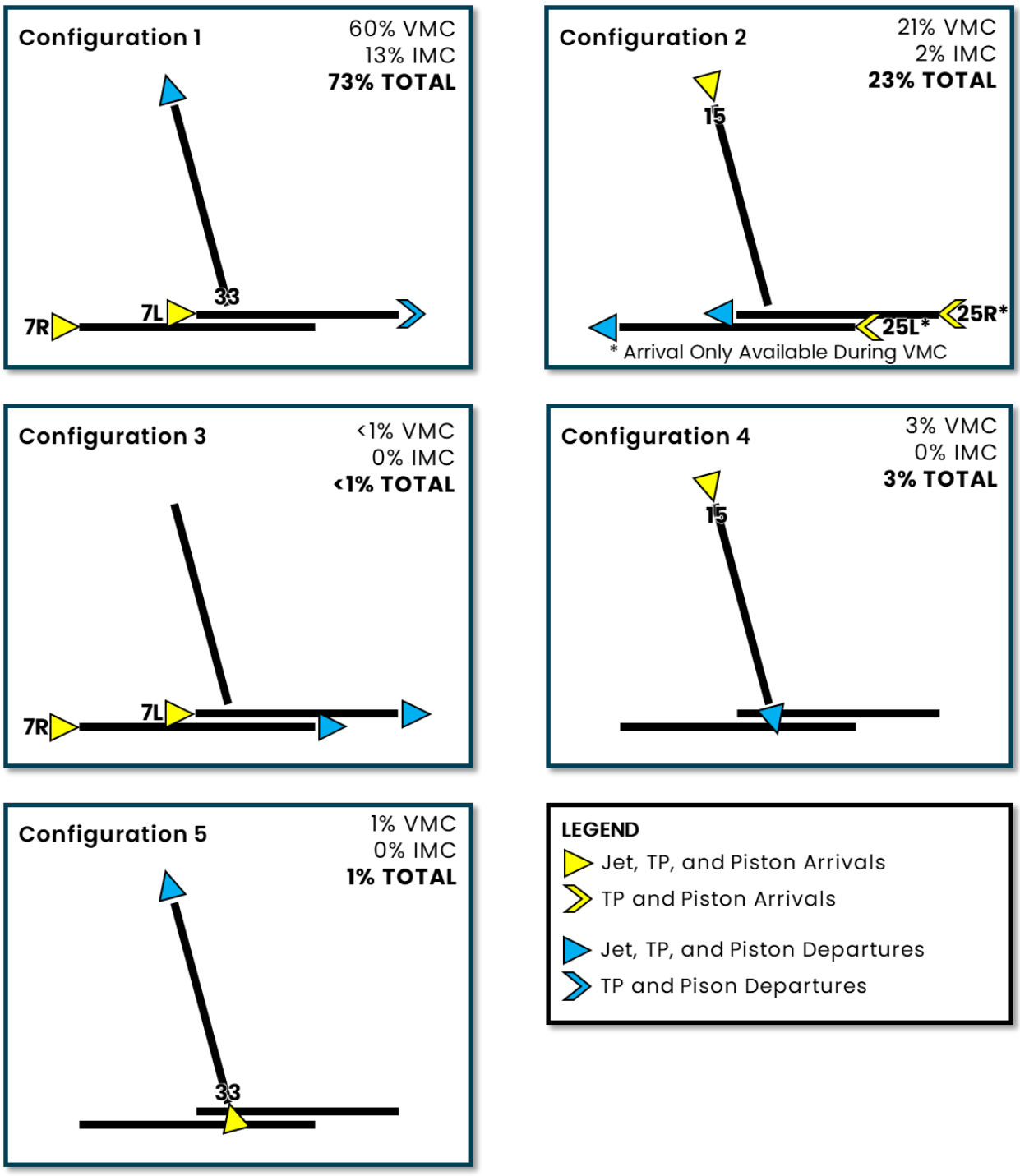
The airfield demand capacity analysis, as described in **Chapter 4, Facility Requirements**, indicated that airfield congestion may lead to untenable delay as demand (particularly air cargo demand) increases at ANC throughout the planning period.

Three alternatives were prepared to explore options for reducing airfield congestion at ANC. The alternatives were derived on the assumption that the State of Alaska's best method of expanding capacity in the planning horizon is improving the existing three-runway configuration and associated facilities at ANC, as indicated in Phase 2 "Optimize ANC" as depicted in **Figure 5-1**.

The alternatives include variations of new taxiway infrastructure and new air cargo development. The alternative explored the North-South Taxiway Preliminary Alternative and varying lengths of the Taxiway Z extension. It also explored varying scales of potential ANC-managed and tenant-proposed air cargo development in different locations around the Airport. The alternatives are discussed in further detail below.

The AirTOP® airport and airspace simulation software was used to evaluate the three alternatives to assess their simulated capacity, congestion, and operational qualities. For this analysis, the simulation was run using the forecast Design Day Flight Schedule (DDFS) for PAL 3 to use the most demanding forecasted traffic volume calculated for capacity simulation purposes. The analysis also only evaluated Runway Use Configuration 1, Runway Use Configuration 2, and Runway Use Configuration 3, as they are the configurations used 96% of the time at ANC. The runway use configurations are summarized in **Figure 5-25**.

Figure 5-25
Runway Use Configurations



Source: RS&H Analysis, 2024

5.2.6.1 Airfield Flow Optimization Alternative 1

Alternative 1 focuses on proposed tenant- and Airport-managed Tech stop positions at the parking development in the South Airpark, the Taxiway Y Cargo Apron, The P-Spots, and cargo tenants in the North Airpark. This alternative relocates the terminal area R-Spots to these other positions to alleviate terminal area congestion, and also has the lowest Taxiway Y Cargo Apron capacity of all AirTOP alternatives. This alternative also utilizes a taxiway parallel to Taxiway R to provide additional terminal area relief. This configuration is depicted in **Figure 5-26**.

5.2.6.2 Airfield Flow Optimization Alternative 2

Alternative 2 considers retaining eight of the RON positions in the terminal area, while deactivating the three eastern-most positions in proximity to the terminal. This is a capacity solution pursued due to the South Airpark parking development not being implemented in this airfield parking iteration. The development of Taxiway Z is also shorter than Alternative 1, only extending west to Taxiway H rather than the Runway 7R end. This configuration is depicted in **Figure 5-27**.

5.2.6.3 Airfield Flow Optimization Alternative 3

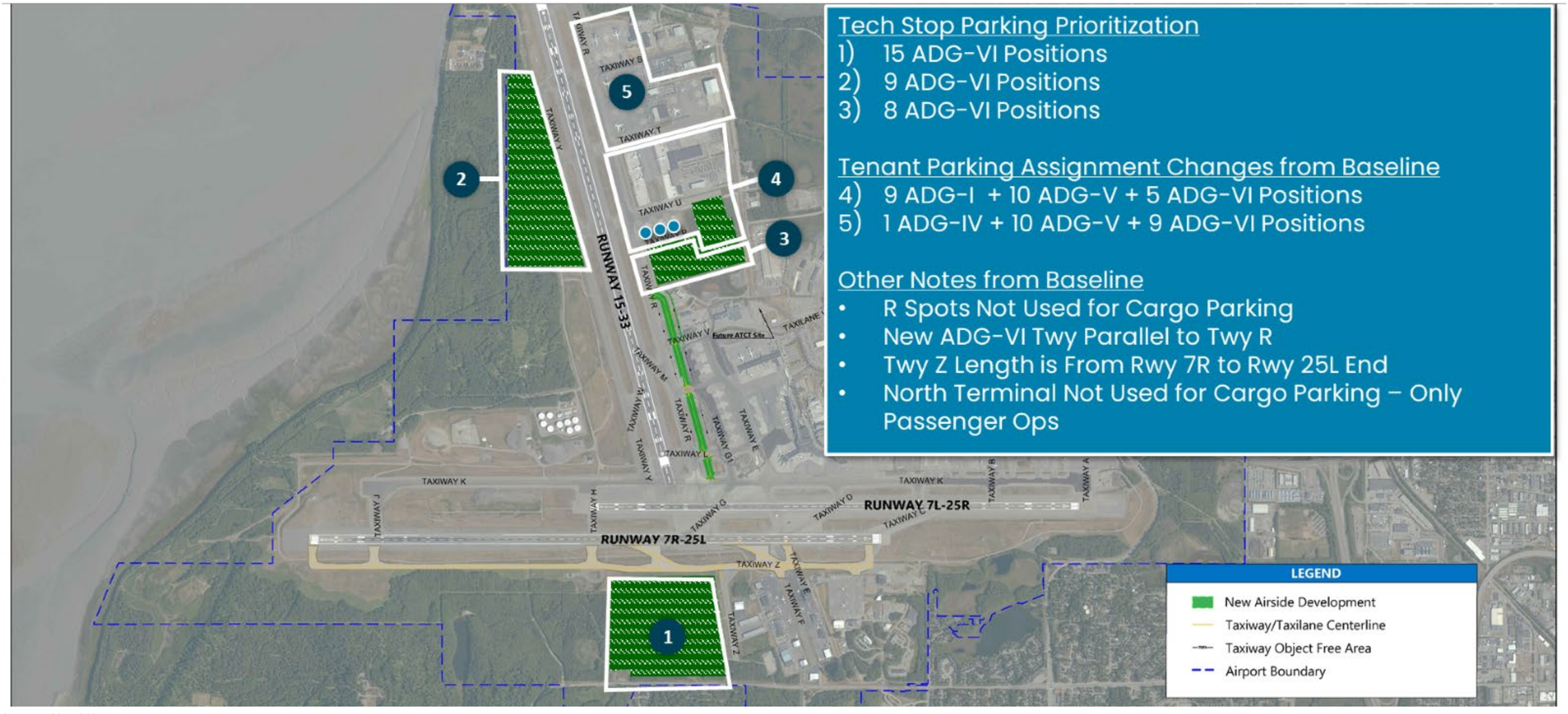
Alternative 3 focuses on a more northerly development plan, heavily utilizing the Taxiway Y Cargo apron area and only using some of the capacity that was provided in the South Airpark in Alternative 1. This alternative also implements a shortened version of the proposed development of Taxiway Z. This configuration is depicted in **Figure 5-28**.

5.2.6.4 Airfield Flow Optimization Alternatives Simulation Results Summary

The AirTOP simulation analysis assessed the operational throughput and delay for each alternative to inform the alternative evaluation and subsequent decision making about potential implementation. The simulations determine how the varying infrastructure elements worked in conjunction with one another to promote efficient movement of aircraft at ANC, particularly during peak times.

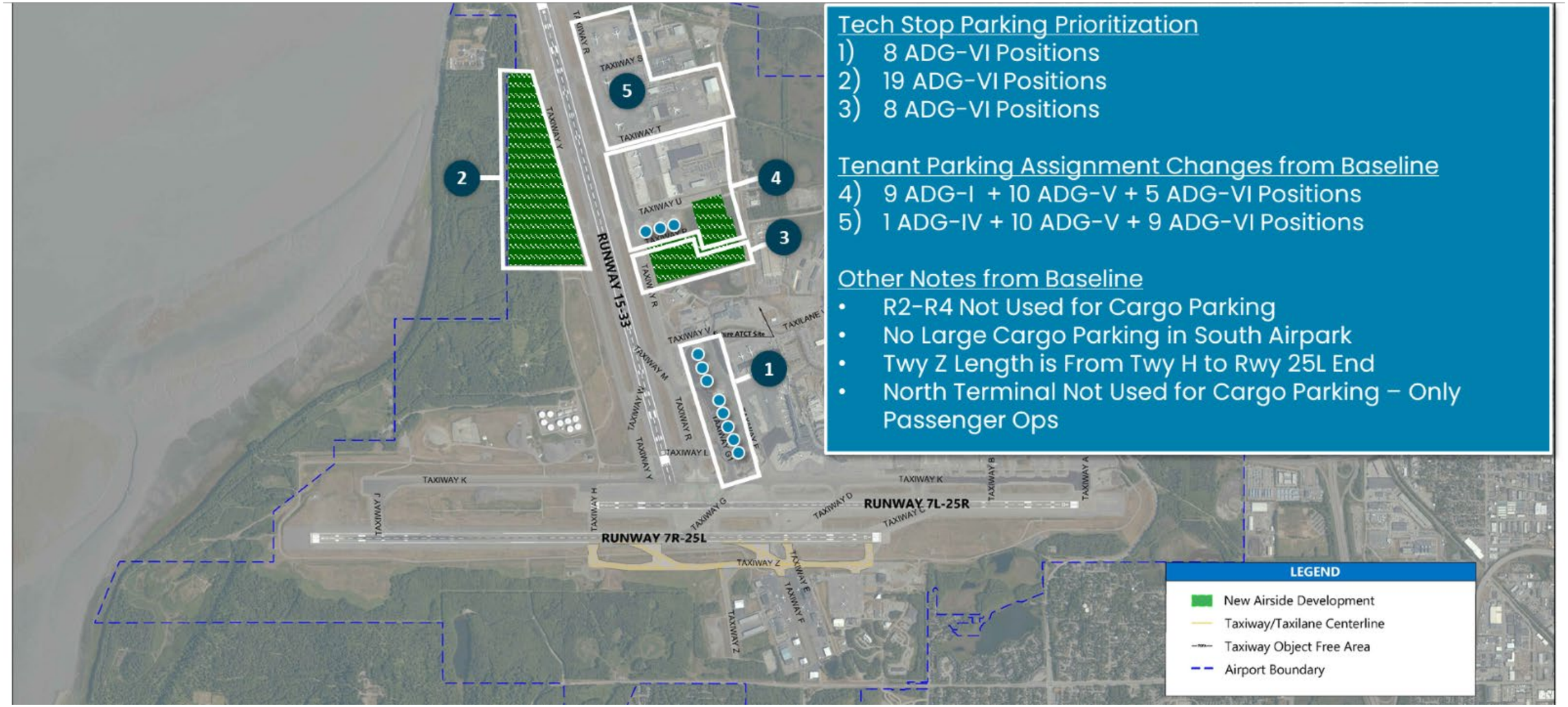
The results of the three alternatives were compared to the PAL 3 Baseline results presented in **Chapter 4, Facility Requirements**. This comparison provides a basis against which to measure the impact of the potential infrastructure changes associated with each alternative. The results of the AirTOP simulation analysis are summarized in **Table 5-2**.

Figure 5-26
Airfield Flow Optimization Alternative 1



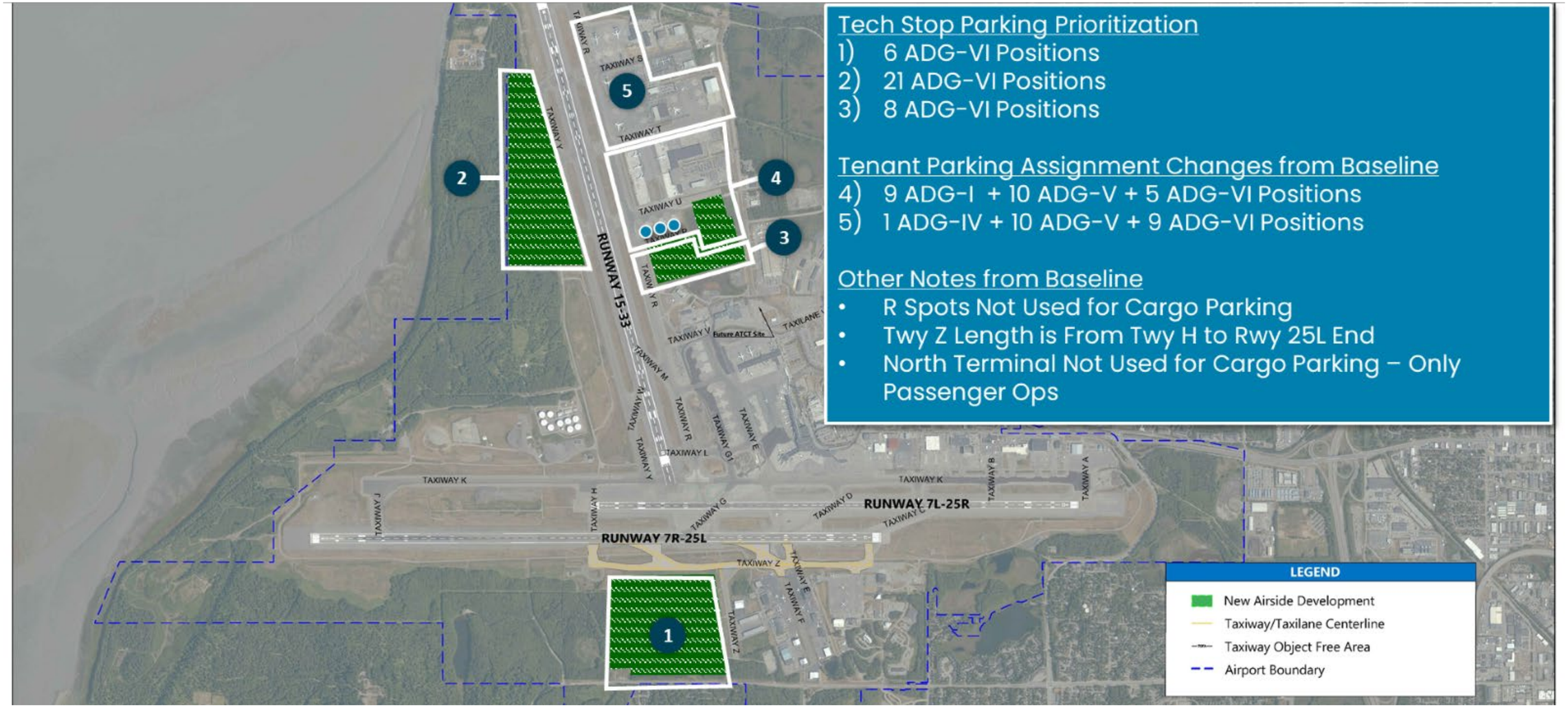
Source: RS&H, 2024

Figure 5-27
Airfield Flow Optimization Alternative 2



Source: RS&H, 2024

Figure 5-28
Airfield Flow Optimization Alternative 3



Source: RS&H, 2024

Table 5-2
Airfield Flow Optimization Alternatives Simulation Results

Operations Demand			Configuration	Weather	Utilization	Operations Throughput		Average Peak Hour Delay (minutes of delay per aircraft during peak hour)			Average Daily Delay (minutes of delay per aircraft during average day)			Average Annual Delay (annualized minutes of delay per aircraft)
Annual	Design Day	Rolling Peak Hr				Departure	Arrival	Departure	Arrival	Peak Total	Departure	Arrival	Peak Total	
PAL 3 Baseline														
325,775	1058	82	1	VMC	60%	37	46	44.3	7.6	50.2	4.5	1.3	5.9	**5.4**
			1	IMC	13%	39	43	36.7	21.6	58.2	4.3	2.8	7.1	
			2	VMC	21%	40	47	20.8	16.7	22.2	1.5	1.6	3.1	
			2	IMC	2%	35	46	72.5	30.0	91.1	9.3	1.7	10.9	
			3	VMC	1%	43	45	71.0	10.1	76.7	9.9	1.3	11.2	
			Weighted Delay (min)					**37.5**	**11.5**	**44.6**	**3.8**	**1.5**	**5.4**	
Alternative 1														
325,775	1,058	82	1	VMC	60%	37	46	51.1	10.5	56.6	5.8	1.4	7.3	**6.3**
			1	IMC	13%	41	43	45.9	10.3	51.7	5.5	1.5	7.0	
			2	VMC	21%	38	46	32.4	3.3	34.1	3.7	0.6	4.4	
			2	IMC	2%	46	49	8.4	7.9	10.5	0.9	0.7	1.6	
			3	VMC	1%	43	46	99.5	2.6	100.6	14.3	0.5	14.8	
			Weighted Delay (min)					**44.1**	**8.5**	**48.5**	**5.1**	**1.2**	**6.3**	
Alternative 2														
325,775	1,058	82	1	VMC	60%	45	46	20.2	30.4	42.9	2.4	3.0	5.3	**6.9**
			1	IMC	13%	43	43	35.6	24.7	55.2	4.7	2.6	7.3	
			2	VMC	21%	41	43	76.8	13.9	87.5	10.1	1.7	11.8	
			2	IMC	2%	39	49	20.6	12.7	22.4	1.8	1.7	3.5	
			3	VMC	1%	44	46	167.8	18.8	171.6	29.6	4.0	33.6	
			Weighted Delay (min)					**34.1**	**24.7**	**52.6**	**4.3**	**2.5**	**6.9**	
Alternative 3														
325,775	1,058	82	1	VMC	60%	39	46	64.9	9.4	73.2	7.6	1.6	9.2	**8.4**
			1	IMC	13%	39	43	53.9	5.5	58.8	5.3	1.1	6.3	
			2	VMC	21%	35	46	49.6	9.1	58.1	7.2	1.6	8.8	
			2	IMC	2%	40	49	23.1	7.2	25.2	1.8	1.4	3.2	
			3	VMC	1%	39	46	123.2	17.2	131.1	20.9	2.2	23.0	
			Weighted Delay (min)					**57.5**	**8.5**	**64.9**	**6.9**	**1.5**	**8.4**	

Source: RS&H Analysis, 2024.

Alternative 1 has similar operational throughput results as the PAL 3 Baseline. However, the Alternative 1 average peak hour delay, average daily delay, and average annual delay are higher compared to the PAL 3 Baseline results. Alternative 2 results in the greatest operational throughput than PAL 3 Baseline, Alternative 1, and Alternative 3. However, the Alternative 2 configuration results in higher delay metrics than the PAL 3 Baseline results. Alternative 3 has similar operations throughput results as PAL 3 Baseline. However, the Alternative 3 delay results are highest of the evaluated alternatives.

In summary, the AirTOP® analysis of the three airside alternatives did not provide conclusive evidence that those alternatives would reduce airfield average daily delay or average peak-hour delay for PAL 3 compared to baseline results.

Due to the level of complexity, phasing, and demand for operations and use cargo parking positions, implementation of these proposed positions should be actively monitored throughout the development process. This will ensure a consistent level of orderly and effective development without causing either aircraft movement or cargo position congestion. There is high demand to develop new air cargo parking at ANC as of the time of the publication of this Chapter (early 2025). New tenant-managed and Airport-managed cargo parking positions are frequently evaluated, requiring ongoing analysis of airport flow and delay. The Master Plan recommends that as new developments are implemented, further simulation modeling should be considered to continually monitor current conditions and anticipate likely future conditions.

5.2.7 North Airpark Hold Pad

The North Airpark Hold Pad is a proposed facility to support engine runups and pre-flight activities of aircraft at ANC. This includes aircraft may be required to either exit takeoff queues for dispatch or flight release, to run up to reach acceptable temperature for departure, or conduct engine runs during maintenance activities while not adding to further airfield taxiway or parking apron congestion.

Existing leasehold boundaries and potential future land developed were considered as evaluation criteria for these concepts. The following criteria guided the alternative evaluation:

- Impacts on surrounding development – will this concept impact existing or proposed development potential for surrounding Airport users?
- Efficient development – will this concept provide the highest value for the least land developed?

Each concept considers shifting the North Tug Road to the perimeter of the Taxiway R TOFA to make the best use of land available. This enables the Hold Pad pavement areas to be smaller due to greater proximity to Taxiway R, reducing redundant apron pavement. Aircraft parked at a Hold Pad position are designed to have a minimum of 25 feet of horizontal clearance from the North Tug Road.

5.2.7.1 North Airpark Hold Pad Concept 1

Concept 1 of the North Airpark Hold Pad provides space for two ADG-VI aircraft hold positions, oriented perpendicular to Taxiway R. Concept 1 would require approximately 13 acres of apron to be constructed. Hold Pad 1 is sited north of Taxiway Q and Hold Pad 2 is south of Taxiway Q to prevent direct access to the runway, as well as having circulation at the south end of the development. The FAA ASSC Tower is not directly impacted by apron development of any object free area. This concept would impact future potential development to the north of the UPS Cargo Facility taxilane. North Airpark Hold Pad Concept 1 is depicted in **Figure 5-29**.

5.2.7.2 North Airpark Hold Pad Concept 2

Concept 2 of the North Airpark Hold Pad provides space for one ADG-VI aircraft hold positions, oriented perpendicular to Taxiway R. Concept 2 would require approximately eight acres of apron to be constructed. This hold pad is sited south of Taxiway Q to prevent direct access to the runway, as well as having circulation at the southern-most point of the development for aircraft circulation. The FAA ASSC tower is not directly impacted by apron development or any object free area. This concept would impact future potential development to the north of the UPS Cargo Facility taxilane. North Airpark Hold Pad Concept 2 is depicted in **Figure 5-30**.

5.2.7.3 North Airpark Hold Pad Concept 3

Concept 3 of the North Airpark Hold Pad provides space for one ADG-VI aircraft hold positions, oriented perpendicular to Taxiway R. Concept 3 would require approximately eight acres of apron to be constructed. This hold pad is sited north of Taxiway Q to prevent access to the runway, as well as having circulation at the southern-most point of the development for aircraft circulation. The FAA ASSC tower would be impacted by the apron development. This concept allows for parking of ADG-VI aircraft on the north end of the UPS Cargo Facility taxilane, making this concept unique from the previous two in this manner. North Airpark Hold Pad Concept 3 is depicted in **Figure 5-31**.

5.2.7.4 North Airpark Hold Pad Concept 4

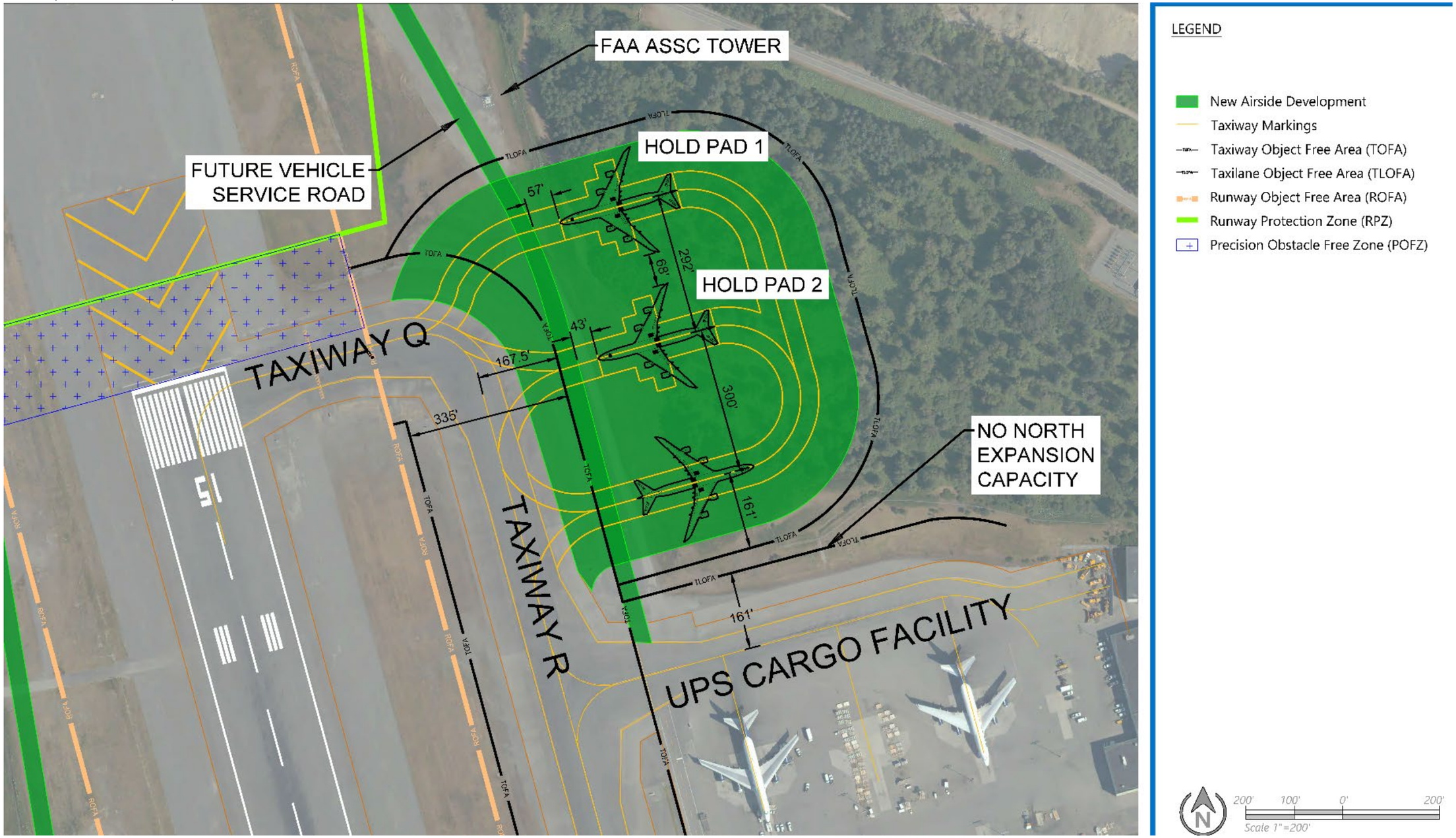
Concept 4 of the North Airpark Hold Pad provides space for two ADG-VI aircraft hold positions, oriented at an angle towards the intersection of Taxiway R and Taxiway Q. Concept 4 would require approximately 14 acres of apron to be constructed. These hold positions are accessed by proceeding into the hold pad on a circulation taxilane following the Taxiway R, past Taxiway Q, then then the aircraft would turn right and proceed to the first or second hold position. This

concept is the most northerly-sited of all concepts, and is the only one to not orient hold positions along Taxiway R perpendicular, in order to preserve as much land to develop to the south as possible. The FAA ASSC tower would be impacted by the apron development. This concept allows for parking of ADG-VI aircraft on the north end of the UPS Cargo Facility taxilane. North Airpark Hold Pad Concept 4 is depicted in **Figure 5-32**.

5.2.7.5 North Airpark Hold Pad Concept Evaluation and Preferred Alternative

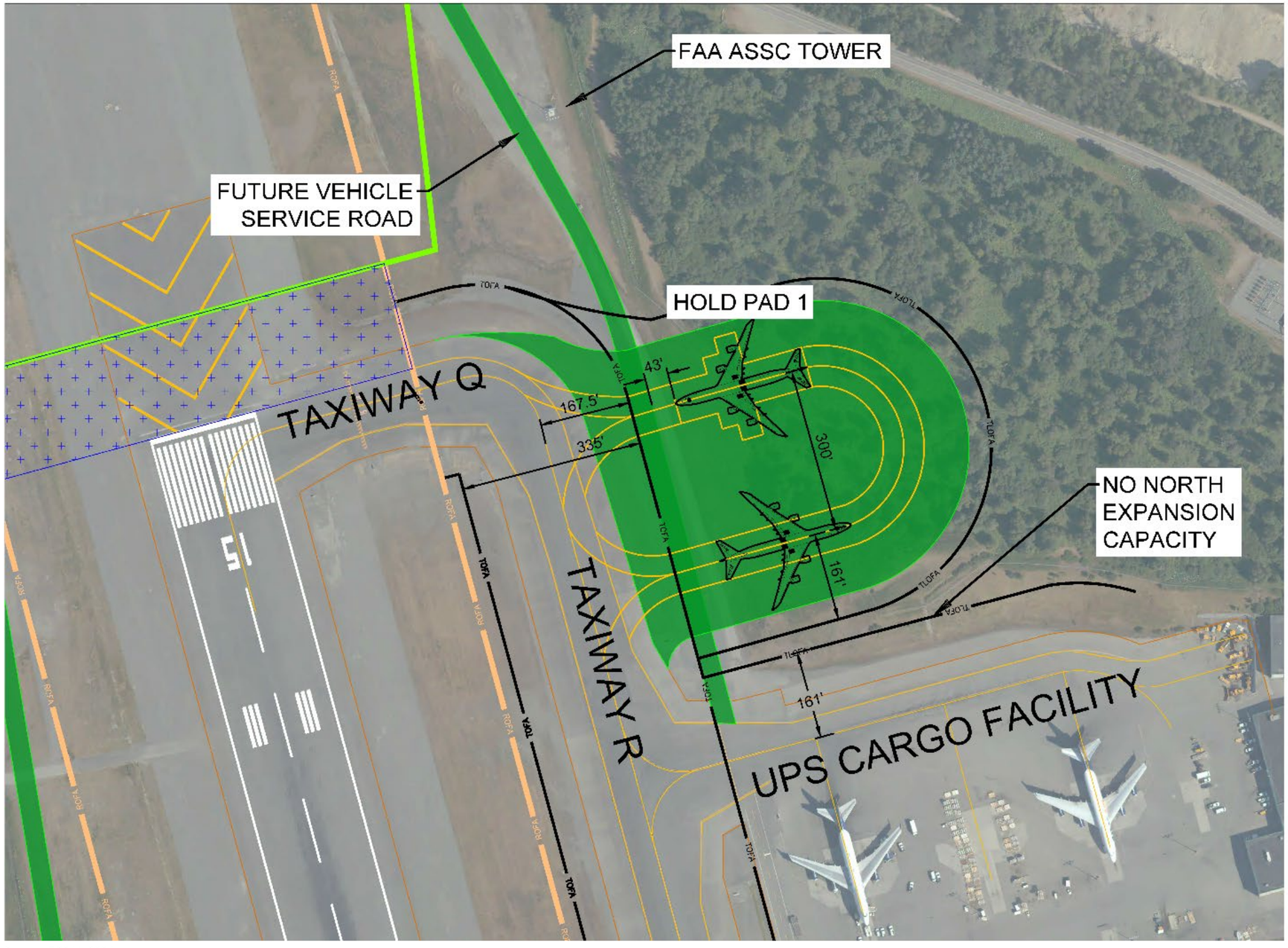
The North Airpark Hold Pad concept evaluation is based on the impact on surrounding property and the efficiency of land development. Concept 1 and Concept 2 would impede the UPS Cargo Facility from expanding the apron to the north which dismissed those concepts from further analysis. Concept 3 would minimize development compared on Concept 4. Concept 3 would reduce the amount of earthwork resulting in a lower construction cost. North Airpark Hold Pad Concept 3 is the preferred alternative and is integrated in the Preferred Airport Alternative.

Figure 5-29
North Airpark Hold Pad Concept 1



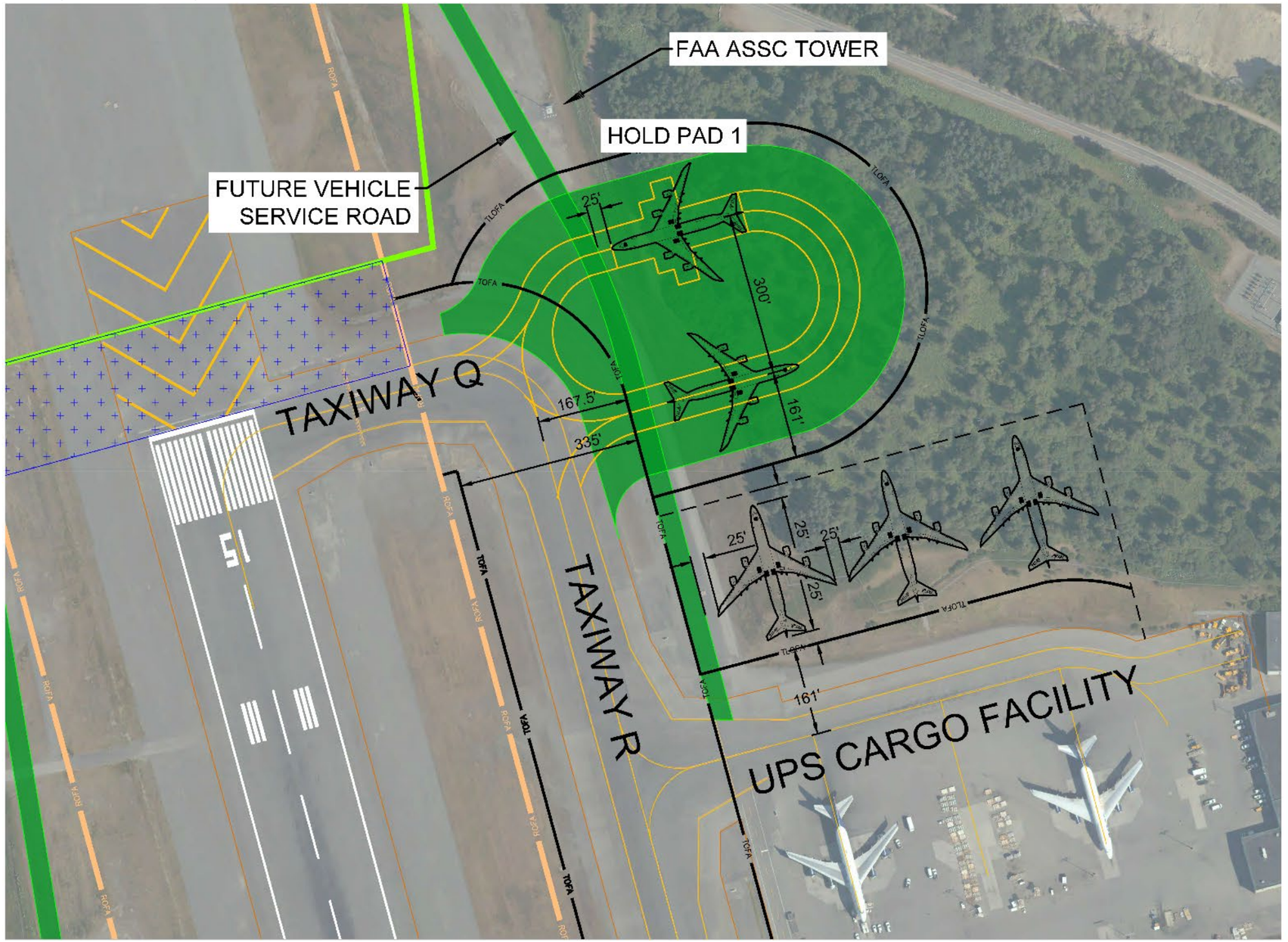
Source: RS&H, 2024

Figure 5-30
North Airpark Hold Pad Concept 2



Source: RS&H, 2024

Figure 5-31
North Airpark Hold Pad Concept 3



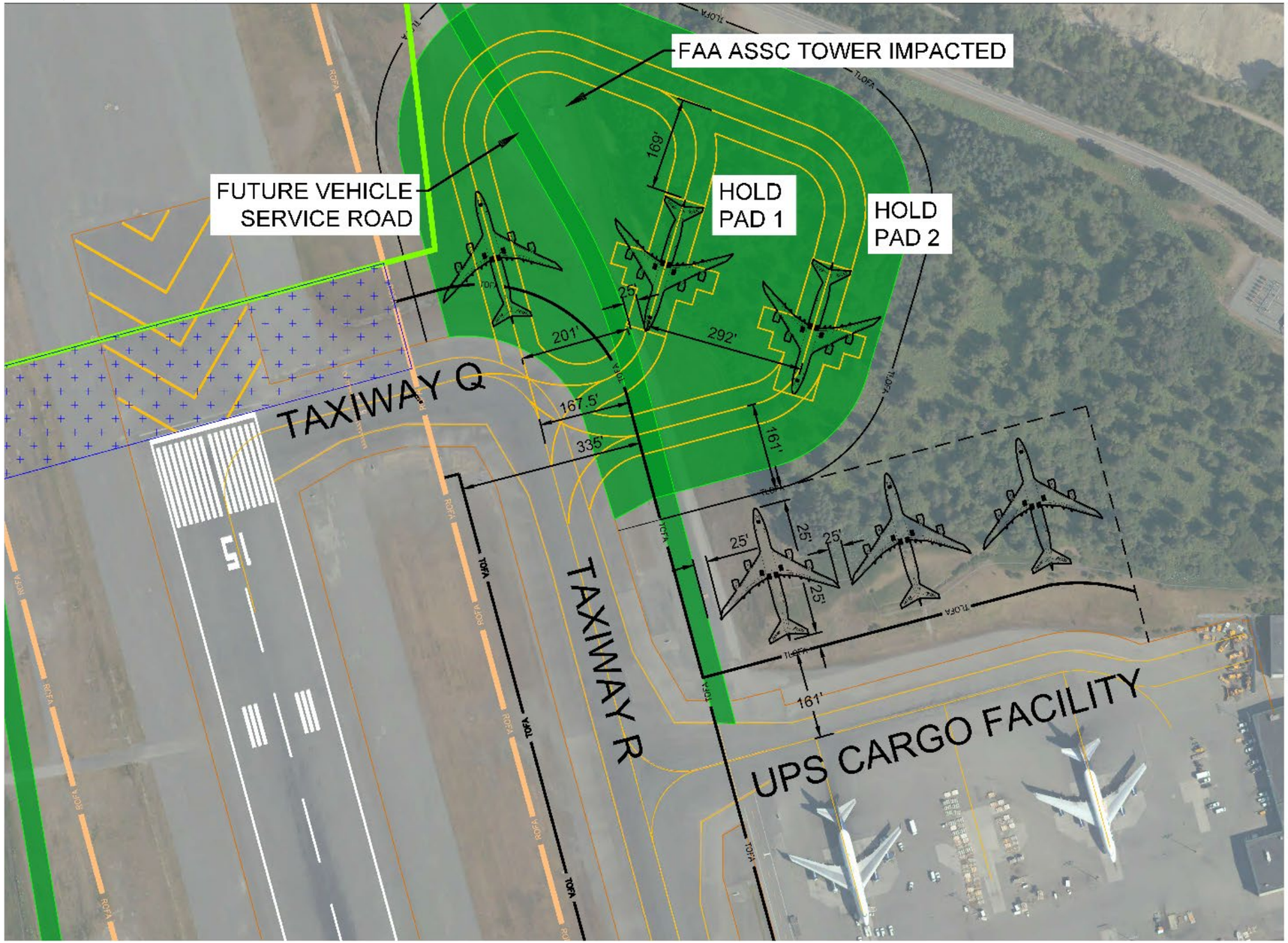
LEGEND

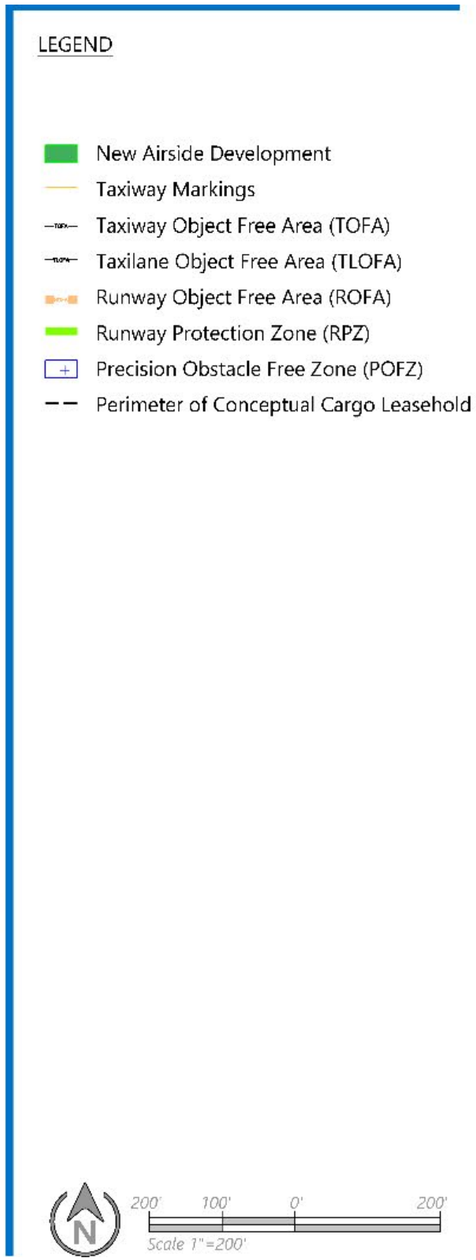
- New Airside Development
- Taxiway Markings
- Taxiway Object Free Area (TOFA)
- Taxilane Object Free Area (TLOFA)
- Runway Object Free Area (ROFA)
- Runway Protection Zone (RPZ)
- Precision Obstacle Free Zone (POFZ)
- Perimeter of Conceptual Cargo Leasehold

200' 100' 0' 200'
Scale 1" =200'

Source: RS&H, 2024

Figure 5-32
North Airpark Hold Pad Concept 4





Source: RS&H, 2024

5.3 Passenger Terminal Concepts

Passenger Terminal Concepts were prepared based on terminal gate and building requirements outlined in the **Chapter 4, Facility Requirements**, aiming to meet forecast demand. PAL 1 calls for 1 to 3 additional or upgraded gates, while PAL 3 requires 8 new gates. Both current conditions and PAL 1 necessitate more security screening checkpoint lanes and expanded outbound baggage handling areas. PAL 3 specifies the need for additional airline ticketing space and expanded outbound baggage screening facilities. Multiple terminal concepts were prepared to increase gate capacity and provide extra space for specific functional areas of the terminal building. These concepts are designed to accommodate PALs projected demand and improve overall functionality within the existing terminal infrastructure.

These concepts were to primarily evaluate the terminal building and gate areas; however, landside facility and roadway analysis was also conducted simultaneously to address associated facility demand, such as curbside congestion and vehicle parking.

5.3.1 Passenger Terminal Concept 1 – A/B Concourse (PAL 2)

Passenger Terminal Concept 1 involves a dual-use approach of the A Concourse to accommodate both regional intrastate carriers and passenger service carriers bound for the Lower 48. Currently, the A Concourse serves as a ground loading area for regional intrastate turboprop aircraft, where passengers board the aircraft directly from the apron. Previously, the upper level of the Concourse, which is currently inactive, featured two gates equipped with passenger boarding bridges designed for larger narrow-body aircraft.

This concept proposes reactivating the upper level by reintroducing boarding bridges at the eastern side of the A Concourse. This aims to optimize A Concourse gate utilization during the nighttime hours. Regional intrastate carriers at ANC predominantly operate during daytime hours. Conversely, jet passenger service carriers serving the Lower 48 states from ANC predominantly operate during the overnight hours.

In Concept 1, the A Concourse will continue its daytime role, accommodating regional intrastate carriers with ground-loading operations. During nighttime operations, two gates on the eastern side will utilize boarding bridges to board passengers on jet aircraft bound for the Lower 48 states. Passenger Terminal Concept 1 is depicted in **Figure 5-33**.

5.3.2 Passenger Terminal Concept 2 – B Concourse / North Terminal (PAL 3)

Passenger Terminal Concept 2 explores expanding the B Concourse, which is identified as the "B Bump-Out." This expansion aims to enhance the existing gates in the southeast portion of the B Concourse and provide space for an additional gate. Currently, the B Concourse is equipped

with two gates in the area the B Bump-Out is proposed to be constructed: B10, which has a boarding bridge, and B11, which does not. Gate B10 lacks a dedicated holdroom for departing passengers, who currently must wait in other areas of the Concourse or circulation zones.

This concept proposes enhancing Gates B10 and B11 and adding a new gate through a B Concourse expansion. This expansion includes holdroom spaces for existing Gates B10 and B11, as well as the new gate. The primary goal of this concept is to ensure that these three gates provide the same Level of Service as other gates in the B Concourse. By integrating holdroom spaces, it centralizes passenger waiting areas and eliminates the need for passengers to wait in dispersed areas of the Concourse. Passenger Terminal Concept 2 is depicted in **Figure 5-34**.

5.3.3 Passenger Terminal Concept 3 – A/B Concourse (PAL 3)

Passenger Terminal Concept 3 builds upon the B Bump-Out expansion proposed in Concept 2 and introduces a redevelopment plan for the A Concourse. This involves demolishing the existing A Concourse and reconstructing it as an in-line extension of the existing terminal building. The new A Concourse would exclusively cater to narrow-body aircraft, effectively replacing its current role for turboprop aircraft serving regional intrastate carriers. These carriers would be relocated to the south side of the North Terminal where they would maintain their ground boarding operations.

In addition to the terminal improvements, this concept considers converting Lot F into a parking garage. An overhead pedestrian walkway is proposed to connect the parking garage directly to the South Terminal, enhancing passenger convenience and accessibility within the terminal complex.

The primary goal of Concept 3 is to accommodate the eight new gates required by PAL 3. This would be achieved by both the B Bump-Out expansion and the new parallel A Concourse. Moving intrastate regional carriers to the North Terminal would free up space for developing the new A Concourse, thereby enhancing terminal capacity of the South Terminal. Passenger Terminal Concept 3 is depicted in **Figure 5-35**.

5.3.4 Passenger Terminal Concept 4 – B/D Concourse (PAL 3)

Passenger Terminal Concept 4 involves a dual-phase approach to meet the PAL 3 terminal requirements. The initial phase involves constructing the previously proposed B Bump-Out by PAL 2. In PAL 3, the construction of a new D Concourse is proposed to accommodate the additional gate demand. A new D Concourse would extend perpendicularly from the existing C Concourse towards the airfield.

The integration of the D Concourse aims to consolidate the terminal into a single building, ultimately replacing the function of the North Terminal and ensuring consistent Level of Service for all passengers. This setup centralizes passenger arrivals at a unified landside area providing access to the A Concourse, B Concourse, C Concourse, or D concourses from one centralized location.

Despite its benefits, Concept 4 presents several challenges. Constructing the new D Concourse would necessitate the closure of three to four existing C Concourse gates. Additionally, an enabling project to the D Concourse construction involves the closure of airport-managed cargo parking spots R2, R3, and R4. It also impacts existing Taxilanes E1, E2, and E3. Operationally, the D Concourse introduces challenges in snow clearance due to its perpendicular design due to the single alley taxilanes between the D Concourse and the B Concourse, as well as the D Concourse and the North Terminal. Unlike large open spaces that facilitate efficient snow removal, the single alley taxilanes make it difficult to clear snow while aircraft operations are underway. Passenger Terminal Concept 4 is depicted in **Figure 5-36**.

5.3.5 Passenger Terminal Concept 5 – D Concourse (PAL 3)

Passenger Terminal Concept 5 builds upon the foundation of Passenger Terminal Concept 4 by proposing a larger D Concourse and omitting the construction of the B Bump-Out. The larger D Concourse in this concept extends further towards Taxiway E and is designed to fully meet the gate requirements specified in PAL 3.

Like Concept 4, this concept presents the same benefits and challenges. Concept 5 aims for a unified terminal structure, ensuring consistent service by centralizing passenger arrivals and processing functions. This setup provides streamlined access to A Concourse, B Concourse, C Concourse, or D Concourse from a centralized location. Like Concept 4, the challenges in this concept include the impacts to existing C Concourse gates, existing cargo parking positions R2, R3, and R4, as well as existing Taxilanes E1, E2, and E3. The presence of single alley taxilanes between the new D Concourse and neighboring areas like the B Concourse and the North Terminal poses challenges for efficient snow removal. Passenger Terminal Concept 5 is depicted in **Figure 5-37**.

5.3.6 Passenger Terminal Concept 6 – North Terminal Gate Reactivation

Passenger Terminal Concept 6 focuses on reactivating the eight gates at the North Terminal to fulfill the PAL 3 terminal gate requirements. Currently, the North Terminal primarily serves as overflow parking for cargo aircraft when the “P” or “R” RON parking spots are occupied. However, during the summer, international passenger airline arrivals use the North Terminal as this is where the Federal Inspection Services (FIS) facility is located. Passengers deplane at the North Terminal then the aircraft is tugged to the South Terminal for departures.

Concept 6 does not propose any infrastructure changes to connect the North Terminal and South Terminal. Passengers departing from either terminal would need to arrive at their respective landside areas. Concept 6 presents challenges since this setup requires passengers transferring between terminals to exit the secure area of one terminal and either walk or take a shuttle to the other terminal. Passenger Terminal Concept 6 is depicted in **Figure 5-38**.

5.3.7 Passenger Terminal Concept 7 – North Terminal (PAL 3)

Passenger Terminal Concept 7 proposes enhancements to the North Terminal and South Terminal, aiming to improve passenger Level of Service by integrating major infrastructure changes. Like Concept 6, Concept 7 focuses on reactivating the gates at the North Terminal. However, it introduces a new E Concourse that connects the North Terminal and South Terminal. This concept allows passengers transferring between flights at different terminals to remain within the secure area. To further enhance passenger service, Concept 7 includes repurposing the existing ATCT site into a parking garage, with a covered pedestrian walkway connecting it to the new terminal expansion.

Concept 7 involves realigning the terminal loop road to improve landside access for both terminals. Currently, the main terminal loop road, International Airport Rd, only loops around the South Terminal. Passengers needing to access the North Terminal must merge onto Postmark Dr quite early in the loop road. The proposed realignment would extend the loop road to encompass both terminals, eliminating the need for passengers bound for the North Terminal to merge onto Postmark Dr.

The realignment of the loop road presents challenges as it would impact existing landside infrastructure. Postmark Dr would also need to be reconfigured which would impact an existing aircraft parking area at Lake Hood Airport. Additionally, Taxilane V would necessitate realignment to accommodate the new loop road alignment. Passenger Terminal Concept 7 is depicted in **Figure 5-39**.

5.3.8 Passenger Terminal Concept 8 – Ultimate Concept

Passenger Terminal Concept 8 represents an concept that exceeds the PAL demand outlined in the **Chapter 4, Facility Requirements**, featuring more gates than required during the planning period. This concept combines elements from previous concepts, integrating both the D Concourse and E Concourse configurations. The construction sequence of these concourses is flexible, offering the ability to prioritize based on operational needs.

Concept 8 also adopts the new terminal loop road alignment introduced in Concept 7, ensuring efficient access to both terminals via a unified roadway system. It includes constructing parking

garages at existing Lot C and Lot A/B locations, with a covered pedestrian walkway linking the Lot A/B garage directly to the terminal. Similar to Concept 7, realignment of Postmark Dr and Taxilane V would be necessary to accommodate the new terminal loop road which would impact existing aircraft parking arrangements at Lake Hood Airport.

While Concept 8 exceeds current PAL requirements, it showcases the potential for optimizing passenger service and gate capacity within the terminals. This concept sets a benchmark for future terminal expansion, aiming to elevate operational efficiency and passenger service at the Airport. Passenger Terminal Concept 8 is depicted in **Figure 5-40**.

Figure 5-33
Passenger Terminal Concept 1 – A/B Concourse (PAL 2)

Source: RS&H, 2024

Figure 5-34
Passenger Terminal Concept 2 – B Concourse / North Terminal (PAL 3)

Source: RS&H, 2024

Figure 5-35
Passenger Terminal Concept 3 – A/B Concourse (PAL 3)

Source: RS&H, 2024

Figure 5-36
Passenger Terminal Concept 4 – B/D Concourse (PAL 3)

GATE COUNT:	Regional	ADG III	ADG V
A/L Concourse	9	-	-
B Concourse	-	10	1
C/D Concourse	-	13	2
E Concourse	-	-	-
North Terminal	-	-	-
TOTAL	9	25	3

GRAND TOTAL: 37

Source: RS&H, 2024

Figure 5-37
Passenger Terminal Concept 5 – D Concourse (PAL 3)

Source: RS&H, 2024

Figure 5-38
Passenger Terminal Concept 6 – North Terminal Gate Reactivation

Source: RS&H, 2024

Figure 5-39
Passenger Terminal Concept 7 – North Terminal (PAL 3)

Source: RS&H, 2024

Figure 5-40
Passenger Terminal Concept 8 – Ultimate Concept

GATE COUNT:	Regional	ADG III	ADG V
A/L Concourse	11	-	-
B Concourse	-	8	1
C/D Concourse	-	12	2
E Concourse	-	4	-
North Terminal	-	13	-
TOTAL	11	37	3

GRAND TOTAL: 51

Source: RS&H, 2024

5.3.9 Passenger Terminal Concept Refinement

The passenger terminal concept evaluation was completed by the Master Plan team in coordination with Airport staff to identify the passenger terminal concepts to proceed to refinement. This evaluation was outlined by the goals and objectives established in the Goals and Objectives Chapter, as well as more specific items within each category in the Chapter.

The evaluation process begins with passenger terminal Concept 1 through Concept 7. Concept 8 was omitted from the evaluation because it was only intended to demonstrate an ultimate condition outside of the Master Plan's 20-year horizon. The goal of the evaluation is to determine which of the seven concepts meets the primary objectives of the passenger terminal facility requirements and eliminate the other concepts from further consideration.

The evaluation includes two criteria which represent the primary objectives, as described below:

- Effective snow operations can be conducted (snow removal operations and deicing)
- Construction phasing does not severely impact airport operations or capacity during construction period

The first objective is motivated by the need to support efficient, safe operations during challenging winter weather conditions at ANC. If the conceptual terminal layout is not conducive to efficient snow removal operations, then another concept must be selected.

The second objective reflects of the Airport's needs for continuous operational efficiency during construction. Concepts that require construction that would heavily disrupt day-to-day operations of the terminal or reduce capacity of the gates are not to be considered further.

Each concept was evaluated against the criteria on a Pass/Fail scale of measurement. A "Pass" results if the alternative satisfies both criteria. A "Fail" results if the alternative does not satisfy one or both criteria, which eliminates the concept from further consideration.

Concept 4 and Concept 5 do not satisfy the effective snow operations criteria. The shape of the D Concourse, the proposed additional concourse for the supplemental gates to meet facility requirements, introduces geometry that would prove challenging for snow removal, temporary snow storage, and protecting ground support equipment (GSE) from precipitation such as snow and ice. Concourse D creates a relatively enclosed area with the north B Concourse gates, the A Concourse gates, and the south D Concourse gates to form a "U" shape on the terminal apron. Concept 3 and Concept 6 do not satisfy the construction phasing capacity criteria. Concept 3 requires major improvements at the A Concourse, as well as some impact to B Concourse gates

that are in proximity to A Concourse gates. Implementation of gates in these locations would reduce existing gate capacity during its construction. Concept 6 would require the North Terminal to close while the necessary building and interior renovations occur. This would require the North Terminal to be closed to both passenger and tech stop traffic. Concept 6 also does not connect the North Terminal building and South Terminal building, making passenger access between the buildings difficult. The evaluation for the passenger terminal concepts is summarized in **Table 5-3**.

Table 5-3
Passenger Terminal Evaluation Results

Criteria	Concept 1	Concept 2	Concept 3	Concept 4	Concept 5	Concept 6	Concept 7
Effective snow operations (snow removal operations, deicing)	✓	✓	✓	✗	✗	✓	✓
Construction phasing does not reduce Airport gate capacity	✓	✓	✗	✓	✓	✗	✓
Alternative Retained for Further Consideration	✓	✓	✗	✗	✗	✗	✓

Note: Cells with blue background indicate concepts that satisfy all primary evaluation criteria and proceed to secondary evaluation.
Source: RS&H Analysis, 2024.

This evaluation determined that Concept 1, Concept 2, and Concept 7 are the preferred concepts. Concept 2 advanced as Alternative 2 and remained largely identical to what was described in the concept phase. The following improvements were made to Concept 1 and Concept 7 based on additional analysis and Airport staff / stakeholder input.

- Alternative 1
  - A/B Concourse modified to provide more ground boarding positions for the intrastate carriers to better fit the needs of the Airport and commercial service operators

- Alternative 7
  - The "E Concourse" evolved into an extension of the C Concourse.
  - Many of the landside aspects of this concept, that are not part of the terminal building itself, may be changed or not included.

The preferred alternative is depicted in **Figure 5-41**.

Figure 5-41
Terminal Building Preferred Alternative

Source: RS&H, 2024

5.4 Landside Concepts

The initial landside alternative concepts aim to meet the infrastructure needs outlined in **Chapter 4, Facility Requirements** and ensure operational efficiency during peak activity periods. Key focus areas include addressing vehicle parking requirements and managing roadway congestion.

An additional 600 vehicle parking spaces are required to meet the existing and PAL 1 demand for travelers. For PAL 3, an additional 2,000 vehicle parking spaces are necessary to accommodate the increased demand from both travelers and employees. During peak periods associated with PAL 3, congestion on the terminal loop road poses a challenge. Resolving this congestion is vital to ensure efficient traffic flow and enhance the passenger experience.

At the time of drafting this document (February 2025), an independent effort is ongoing to site a location for a new ATCT facility for ANC. The preliminary site has been identified as the existing C Parking lot for LHD. This planned relocation of the ATCT facility will enable opportunities for repurposing the existing ATCT site once the proposed ATCT facility begins operations.

5.4.1 Landside Concept 1

Landside Concept 1 prioritizes the improvement of current landside infrastructure while preserving the integrity of the terminal loop road (International Airport Road). Central to this approach is relocating the current ATCT site to the C Parking aircraft tie-downs area, creating opportunities for repurposing the old site. Plans include the construction of new facilities such as a parking garage and/or hotel at both the current ATCT site and Lot F. Lot B is an additional area identified for landside redevelopment potential. This concept also considers a southward expansion of the Park, Ride, & Fly Lot. Landside Concept 1 is depicted in **Figure 5-42**.

5.4.2 Landside Concept 2

Landside Concept 2 proposes roadway realignments aimed at addressing anticipated congestion on the terminal loop road and improving traffic flow within ANC's landside areas. Central to this alternative is the rerouting of the Terminal loop road (International Airport Road) to encircle the North Terminal, thereby improving passenger accessibility. Concurrently, Postmark Drive is realigned to accommodate the rerouted terminal loop These adjustments impact a segment of existing Lot D and sections of the A Parking and B Parking aircraft tie-down areas at Lake Hood Airport. Landside Concept 2 is depicted in **Figure 5-43**.

Concept 2 considers vehicle parking development that mirror those in Concept 1. The ongoing plan to relocate the ATCT that is separate from this Master plan, which would relocate the facility to C Parking, would enable potential development of new parking garage and/or hotel

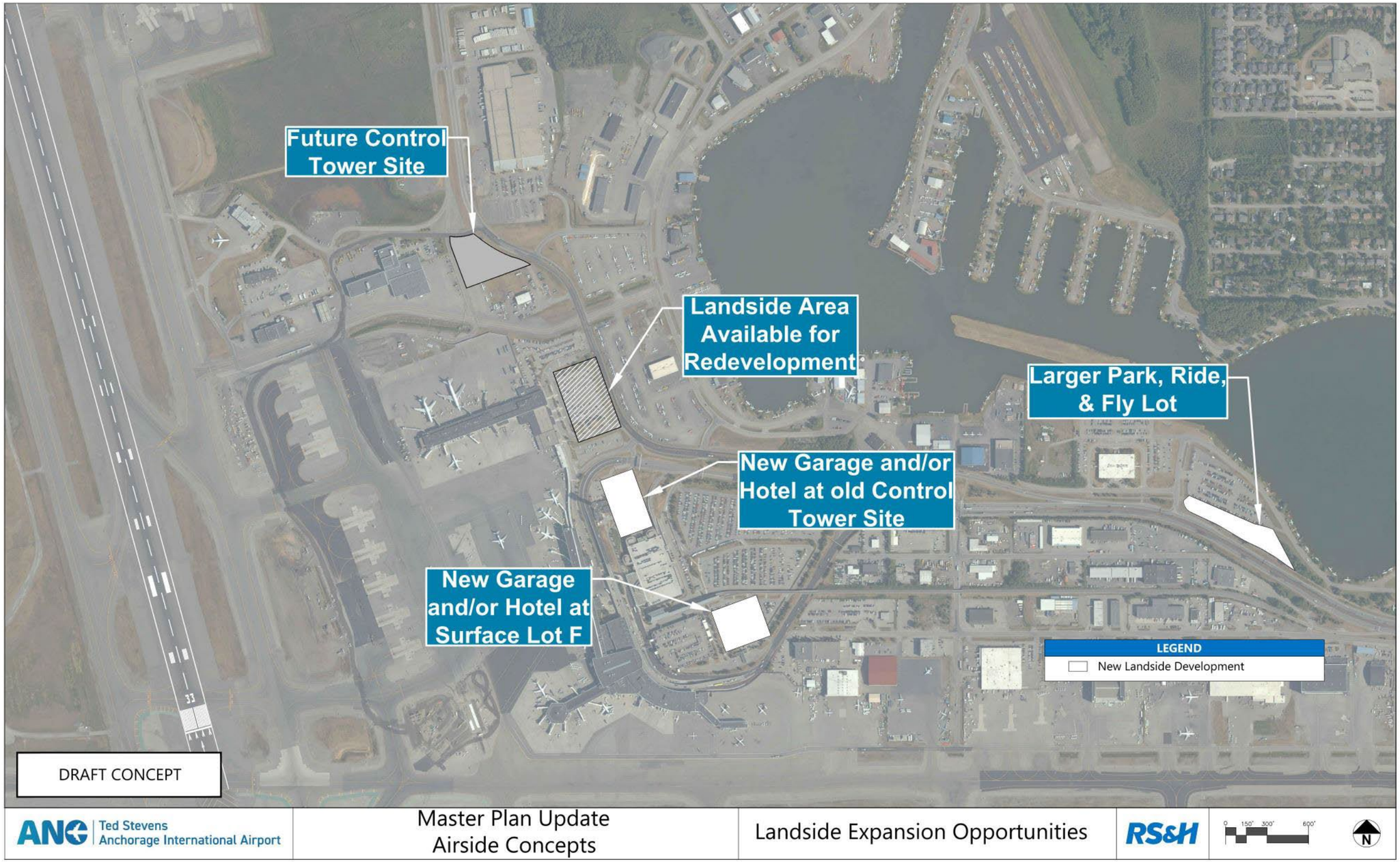
facilities at the current ATCT site and Lot F. Opportunities for landside redevelopment include the existing Lot B, and the Park, Ride, & Fly Lot is proposed for expansion southward. Alternative 2 aims to mitigate terminal loop road congestion while minimizing impacts to current landside infrastructure.

5.4.3 Landside Concept Evaluation

The differentiating factor between Landside Concept 1 and Landside Concept 2 is the new roadway configuration, also known as the New terminal loop road. Although this new roadway configuration could address traffic flow and congestion concerns, it results in significant impact to several existing facilities. Therefore, Concept 2 was dismissed from further consideration and Concept 1 was selected for advancement.

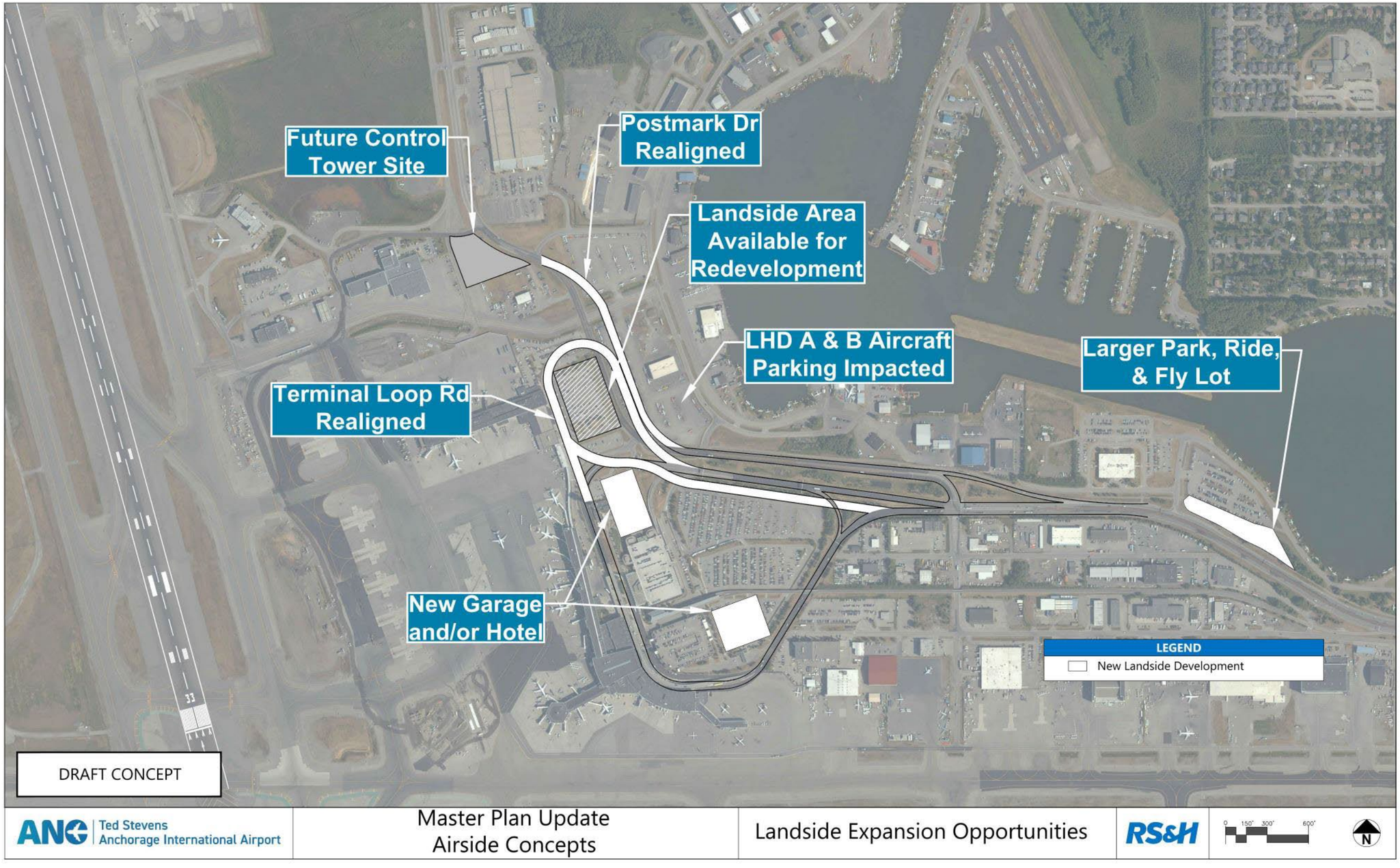
The New terminal loop road may be implemented at a later time; however, further analysis is needed to fully explore the impact and cost of the potential future implementation.

Figure 5-42
Landside Concept 1



Source: RS&H, 2024

Figure 5-43
Landside Concept 2



Source: RS&H, 2024

5.5 Support Facilities

The concepts for the Airport's support facilities were prepared to enhance the efficiency and capacity of support key focus areas, ensuring they can meet both current needs and future demands as outlined in the **Chapter 4, Facility Requirements**. Key focus areas include GA development, Fire & Safety facilities, and snow storage sites.

GA requirements indicate that an additional 3 acres of GA development is necessary to meet current needs, with PAL 3 requiring an additional 10 acres.

The existing Fire & Safety Building (also referred to as Station 1) is approximately 30 years old. It requires expansion and modernization to continue supporting safety and security functions effectively.

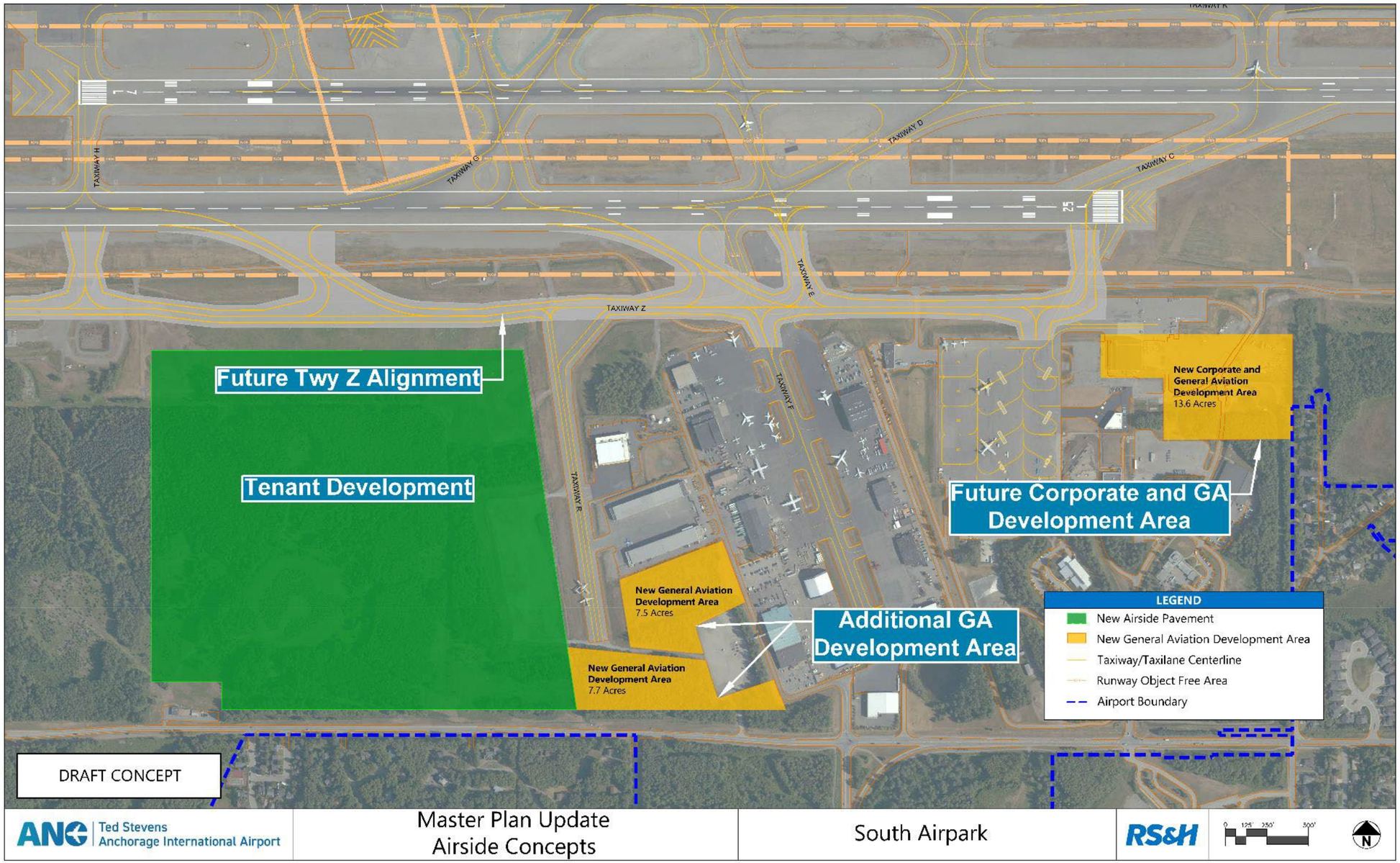
Ensuring ample snow storage areas is essential to maintain operational readiness during winter conditions and facilitate efficient snow removal operations.

5.5.1 South Airpark Support Facilities Preliminary Alternative

In the South Airpark Support Facilities Preliminary Alternative, key developments are proposed to enhance GA and corporate aviation facilities. A new area for corporate and GA development is designated south of Taxiway Z near the threshold of Runway 25L, covering approximately 13.6 acres. Additionally, there are plans to establish two more GA development zones: one covering approximately 7.7 acres south of the north-south segment of Taxiway Z, and another covering approximately 7.5 acres located east of this same taxiway segment. This alternative includes a potential tenant development site NorthLink, which is located west of the South Airpark Apron. These planned concepts are designed to expand and optimize the South Airpark's support facilities, catering to current demands and future growth in general and corporate aviation activities. The South Airpark Support Facilities Preliminary Alternative is depicted in **Figure 5-44**.

The sites for corporate and GA development total approximately 15 acres, roughly double the amount established in **Chapter 4, Facility Requirements**. This was done due to the nature of the development of potential facilities at these sites. As they are planned to be corporate or GA development, they are tenant-lead and therefore would be constructed by non-airport organizations, such as companies or private developers. By identifying a surplus of space, this grants flexibility in development opportunities to these organizations and the Airport.

Figure 5-44
South Airpark Support Facilities Preliminary Alternative



Source: RS&H, 2024

5.5.2 Renovate and Expand Fire & Safety Station 1

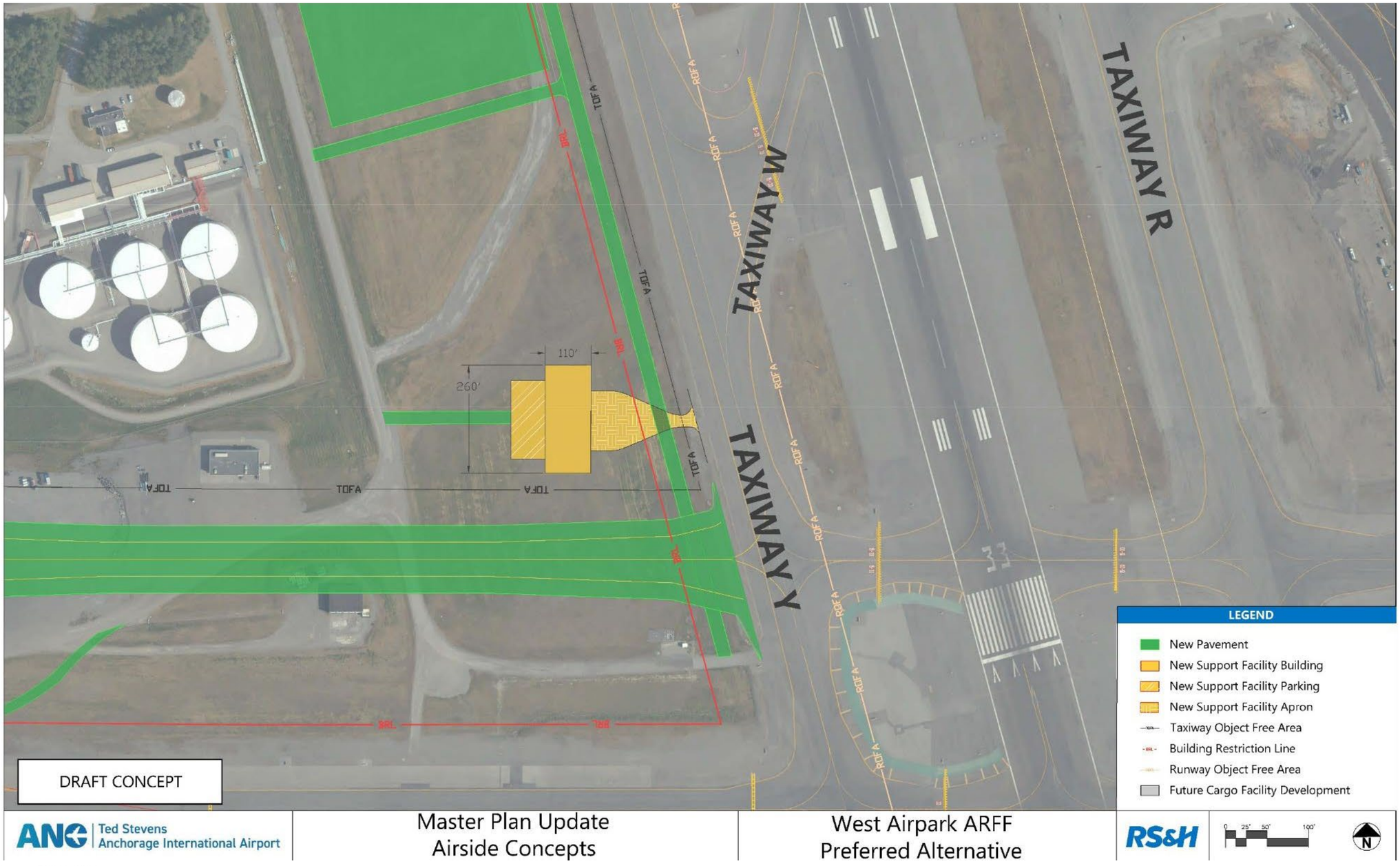
The Master Plan recommends a concept for Station 1 to undergo an interior renovation and building expansion, improving the policing functions within the building. The renovation and expansion in this recommended concept would include better information technology infrastructure, detainee hold rooms, evidence storage, and accommodations for 24/7 facility staffing for Fire & Safety functions and staff. Dispatch services, which are currently provided in the North Terminal, would also relocate into Station 1. These improvements would address facility requirements that currently exist.

5.5.3 Relocate ARFF Facility Station 2

Station 2, which houses Fires & Safety functions in support of Station 1, is located in the South Airpark. The Master Plan recommends a facility concept that would relocate Station 2 to meet facility requirements and promote more orderly and effective development in both South Airpark and West Airpark. This concept would relocate the facility to the West Airpark, west of Taxiway Y and North of Taxiway K.

The new station would have permanent, 24/7 staffing for Fire & Safety services and personnel. This station would serve as the primary response area, including satisfying the FAA Part 139 response time. The station would be capable of storing six ARFF vehicles inside the apparatus bay. The conceptual siting and layout of this facility is depicted in **Figure 5-45**.

Figure 5-45
West Airpark ARFF Preferred Alternative



Source: RS&H, 2024

5.6 Preferred Alternatives

The airport's development plan combines the preferred alternatives from the four functional areas: Airside, Terminal, Landside, and Support Facilities. These recommendations evolved from the initial concepts following a thorough iterative process that incorporated feedback from Airport staff and public input sessions. The Preferred Alternative Overview is depicted in **Figure 5-46**.

5.6.1 Airside

The Airport's recommended airside development strategy centers on two key focus areas: runways and air cargo facilities. The Preferred Alternative preserves land for a future potential 4th runway to meet anticipated demand, ensuring operational capacity under PAL 3 conditions. The Preferred Alternative includes initiatives for tenant cargo development and the expansion of the West Airpark to enhance Airport-managed cargo areas. These initiatives aim to upgrade existing cargo facilities, accommodate growth, and strengthen the Airport's position as a vital hub for cargo aviation.

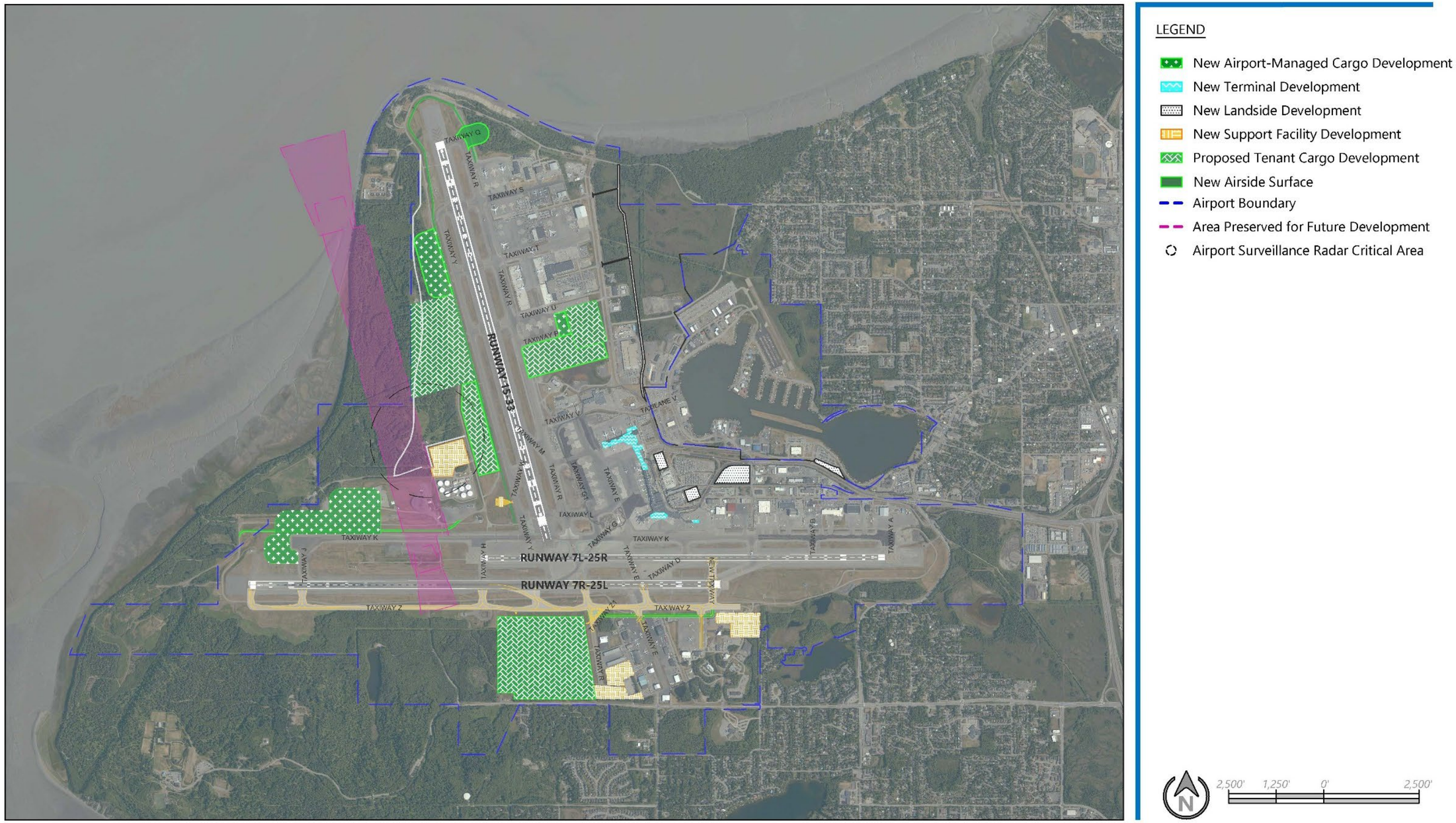
The Preferred Air Cargo Alternative aims to meet future cargo parking demand and reduce airfield congestion by facilitating development areas for both tenant and Airport-managed cargo operations.

The Preferred Alternative designates areas in the North Airpark, South, Airpark, and West Airpark for tenant cargo development. ACCS, and FedEx are the designated tenants for cargo development in the North Airpark, while NorthLink will occupy the development area in the South Airpark. There is also planned tenant cargo development in the West Airpark.

The Preferred Alternative proposes relocating these spots gradually to the West Airpark. Two designated areas have been proposed for cargo development. One is proposed west of Taxiway Y based on the West Airpark Taxiway Y Cargo Apron Preferred Alternative and another is proposed north of Taxiway K based on the West Airpark Taxiway K Cargo Apron Preferred Alternative. The West Airpark Taxiway Y Cargo Apron Preferred Alternative will be phased for development before the West Airpark Taxiway K Cargo Apron Preferred Alternative, as it has preferable visibility, landside access, and construction requirements. This relocation will free space in the North Airpark and Terminal Area, reducing airfield congestion and potentially allowing for increased snow storage and centralized deicing capabilities in the terminal area.

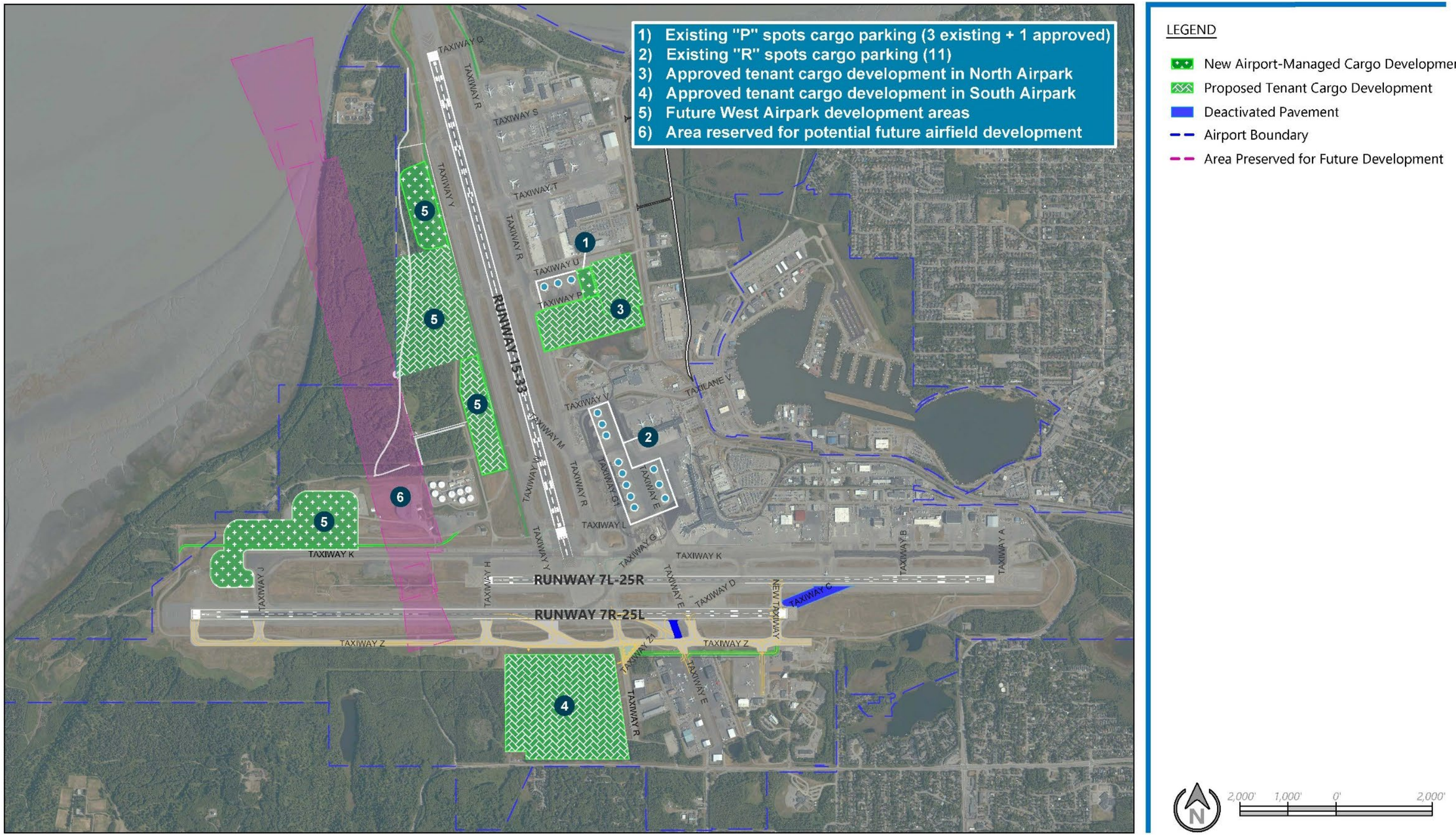
The Preferred Airside Alternative is depicted in **Figure 5-47**.

Figure 5-46
Preferred Alternative Overview



Source: RS&H, 2024

Figure 5-47
Preferred Airside Alternative



Source: RS&H, 2024

5.6.2 Passenger Terminal

The Preferred Passenger Terminal Alternative was developed to manage growing demand and fulfill terminal facility needs identified for each PAL. It incorporates several refined components from initial concepts and unfolds across three phases, each intended to address specific operational demands corresponding to their respective PALs. **Figure 5-48** provides an overview of the Preferred Terminal Alternative, showing each area corresponding to the three phases.

5.6.2.1 Phase 1: A Concourse Expansion and B Concourse Bump-Out

Phase 1 proposes expanding the A Concourse and B Concourse to meet PAL 1 requirements. The A Concourse extension is proposed as an at-grade, single-level expansion . It proposes two new holdrooms (Gate A17 and Gate A18) and relocation of the holdroom for Gate A16 to repurpose its existing space as a circulation area. The A Concourse expansion is depicted in **Figure 5-49** and **Figure 5-50.**

The B Concourse Bump-Out spans two levels. It features an expanded upper level designed to house a larger passenger security screening checkpoint. The B Concours Bump-Out would provide more space for a larger TSA security screening checkpoint. The larger checkpoint would support eight lanes. Additionally, the B Concourse Bump-Out relocates the holdroom for Gate B1 and introduces holdrooms for Gate B10 and Gate B11, aligning them with the Level of Service of other B Concourse gates. The upper level also provides additional space for concessions and restrooms. On the lower level, the B Concourse expansion incorporates increased capacity for inbound and outbound baggage handling. The designated areas are conceptual and may undergo adjustments during the design phase. The B Concourse Bump-Out is depicted in **Figure 5-51** and **Figure 5-52**.

The A Concourse extension adds a new turboprop aircraft position, Gate A18, while repositioning Gates A11, A13, A15, and A17 southward toward Taxiway K. This adjustment preserves their capability for power-in and power-out operations without relying on aircraft tugs. The B Concourse Bump-Out impacts the existing Gate L1 turboprop aircraft parking position. Turboprop regional intrastate carriers primarily conduct operations during the day, whereas jet passenger service carriers serving routes to the Lower 48 states typically operate at night. During daytime hours, when demand for jet gates is minimal, Gate B10 and Gate B11 remain vacant and allows for the accommodation of a turboprop aircraft at position L1. Conversely, at night, when the demand for regional intrastate carriers is minimal, Gate B10 and Gate B11 are occupied by jet aircraft and position L1 is not utilized. **Figure 5-53** depicts the conceptual daytime apron usage and **Figure 5-54** depicts the conceptual nighttime apron usage.

5.6.2.2 Phase 2: C Concourse Expansion

Phase 2 proposes extending the C Concourse to connect to the North Terminal to meet PAL 2 requirements. The upper-level expansion includes relocating Gates C7, C8, and C9, while introducing new holdrooms for new Gate C10 and Gate C11. Additional circulation and concessions space are allocated to these gates, maintaining consistent Level of Service throughout the C Concourse.

On the lower level, the extension enhances outbound baggage handling capabilities and introduces extra baggage make-up carousels. A flex space is reserved for future needs, offering adaptable solutions to meet changing operational demands. It may be possible to design the C Concourse extension such implementation does not trigger seismic retrofit of the North Terminal; however, additional analysis is required to confirm. The C Concourse expansion is depicted in **Figure 5-55** and **Figure 5-56**.

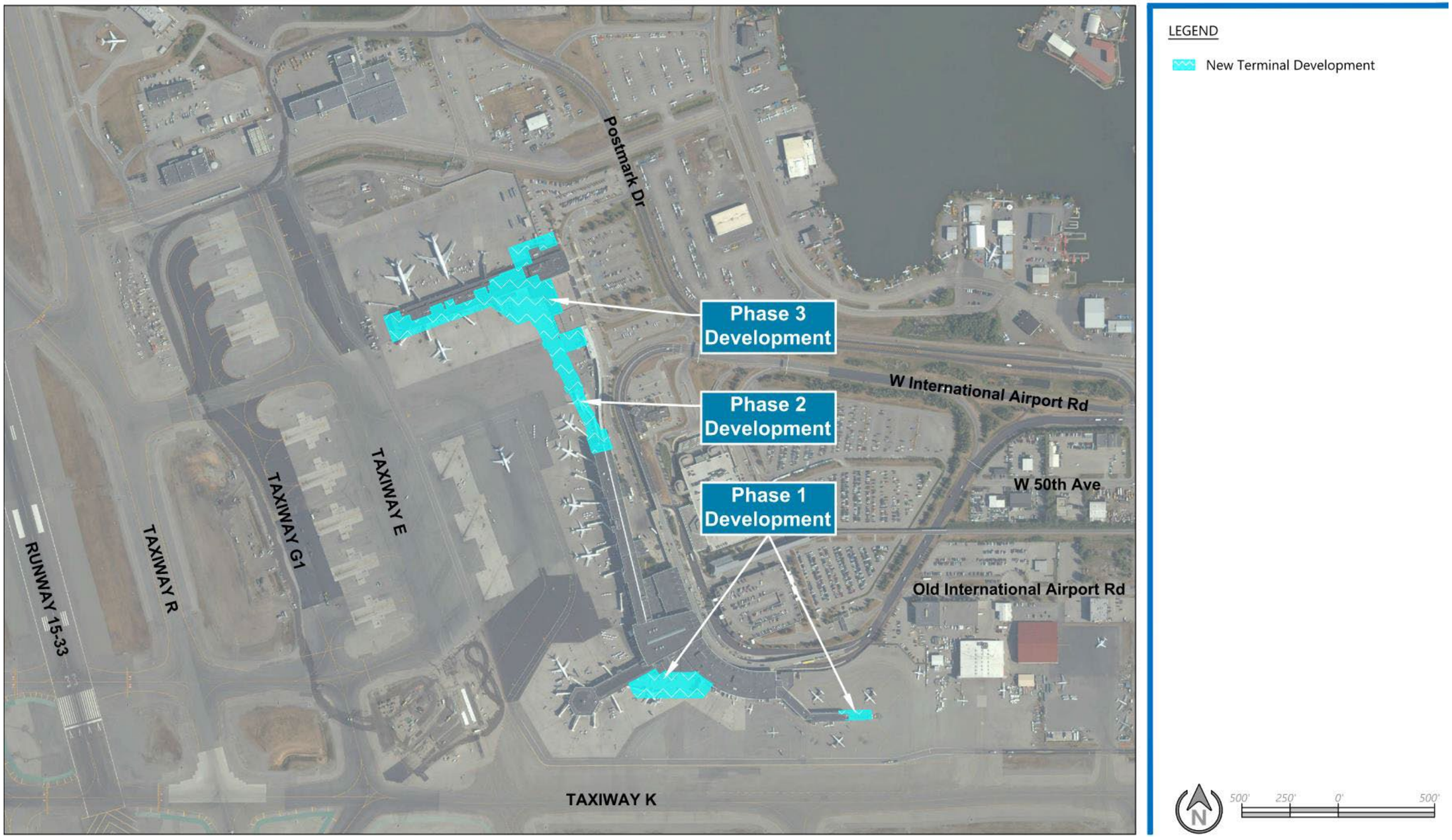
5.6.2.3 Phase 3: North Terminal Expansion

Phase 3 proposes expanding the North Terminal to meet PAL 3 requirements. The existing North Terminal has eight gates capable of accommodating widebody aircraft. The project proposes reconfiguration of the North Terminal apron and aircraft parking positions. The project would result in nine gates at the North Terminal: six domestic narrowbody gates and three widebody international swing gates

The four gates on the south side of the North Terminal and the two gates on the west side of the North Terminal would be designed as narrowbody domestic gates. The three gates on the north side of the North Terminal would be designed as swing gates. During international passenger arrivals, deplaning passengers would be directed through sterile corridors to the FIS facility for processing. For domestic arrivals, deplaning passengers would exit to the holdroom after landing. This reconfiguration ensures an increase in gate capacity without compromising the three dedicated widebody gates on the north side of the North Terminal reserved for international arrivals.

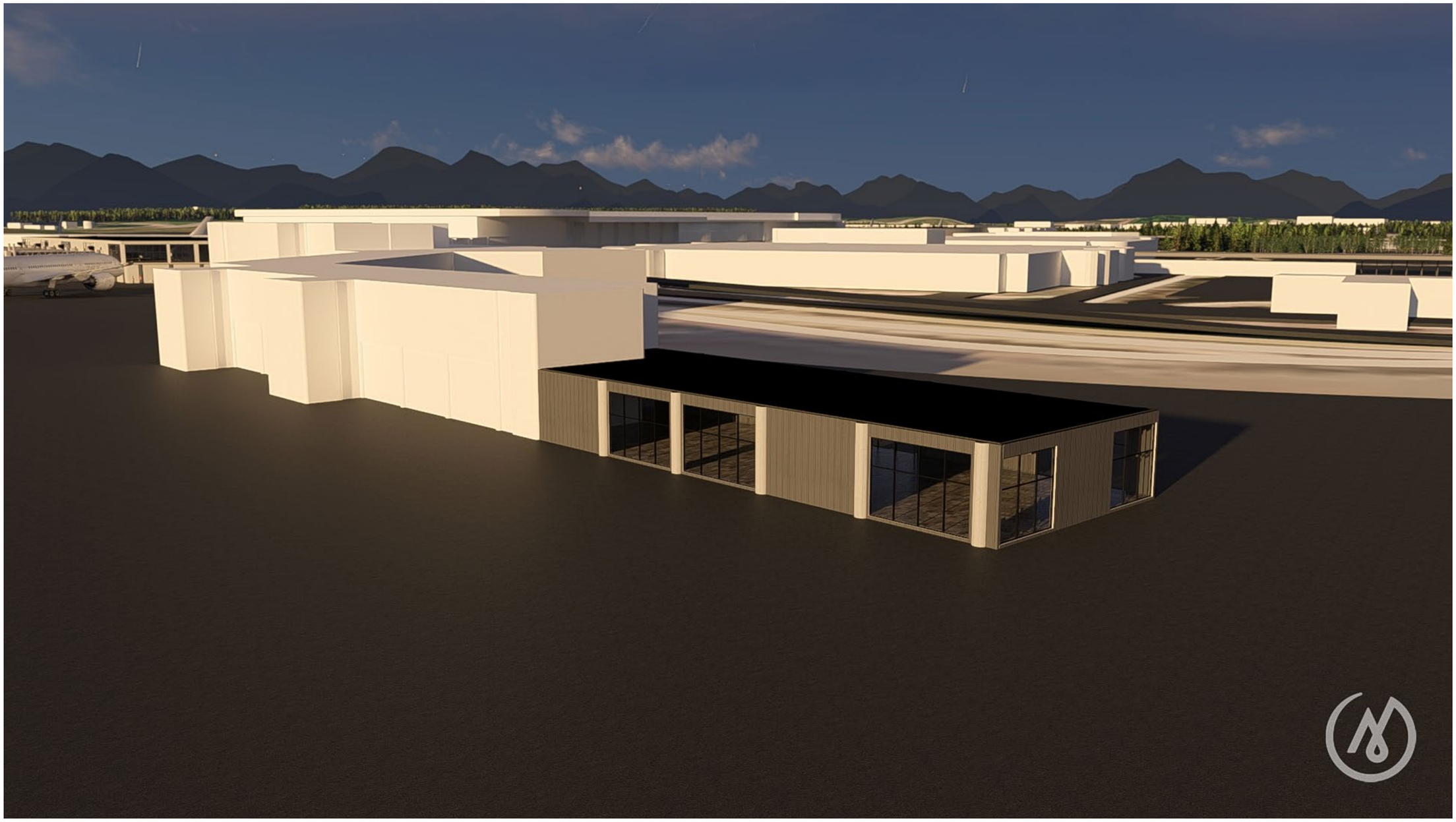
The upper-level expansion includes a larger passenger security screening checkpoint with four lanes. This creates a total of 12 screening lanes between those in the North Terminal and South Terminal. Additional circulation areas and expanded holdrooms are also included to support the operations of North Terminal gates. The lower-level expansion enhances baggage handling capabilities. Dedicated areas include a new outbound baggage make-up facility and a proposed inbound baggage area adjacent to the existing carousel. Additionally, an expanded loading dock is planned for the northeast side of the building to support a more efficient concessions receiving operations. The North Terminal Expansion is depicted in **Figure 5-57** and **Figure 5-58**.

Figure 5-48
Preferred Terminal Alternative – Overview



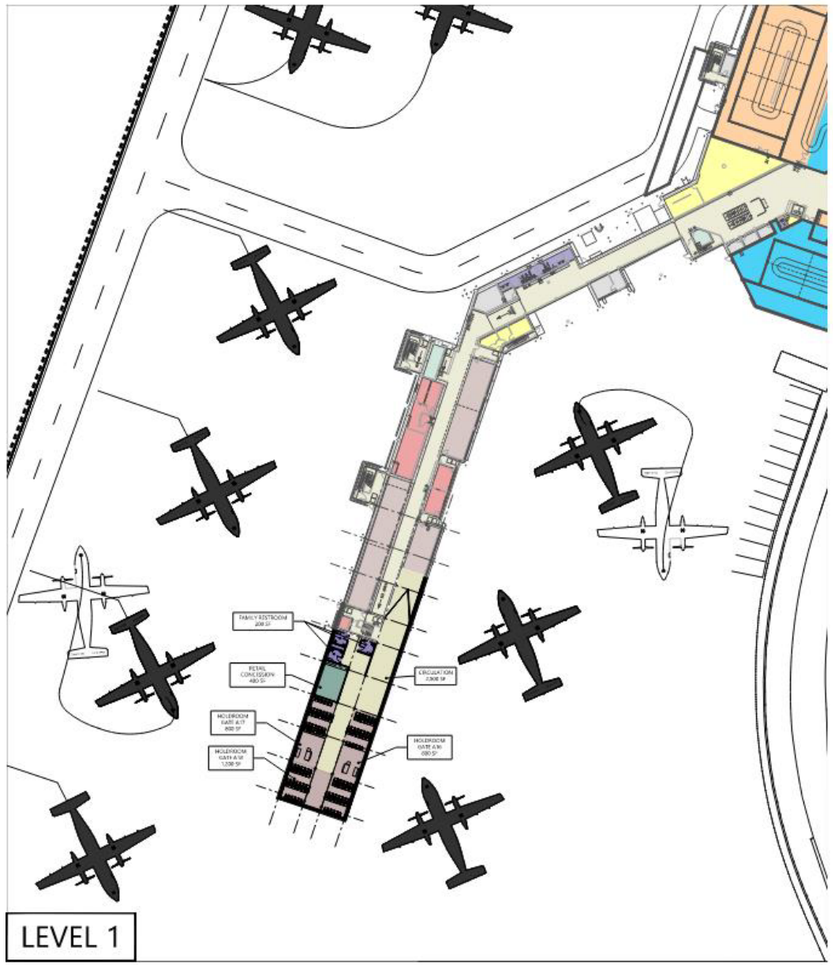
Source: RS&H, 2024

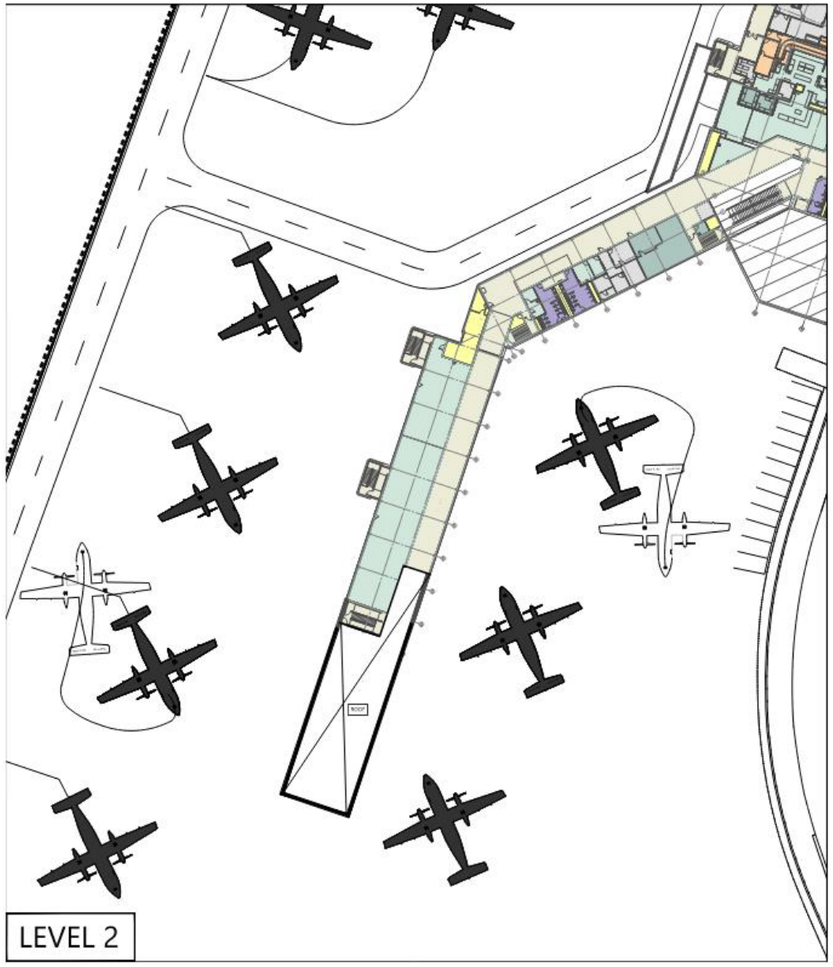
Figure 5-49
Preferred Terminal Alternative – A Concourse Expansion Rendering



Source: MCG Explore Design, 2025.

Figure 5-50
Preferred Terminal Alternative – A Concourse Expansion Floorplan



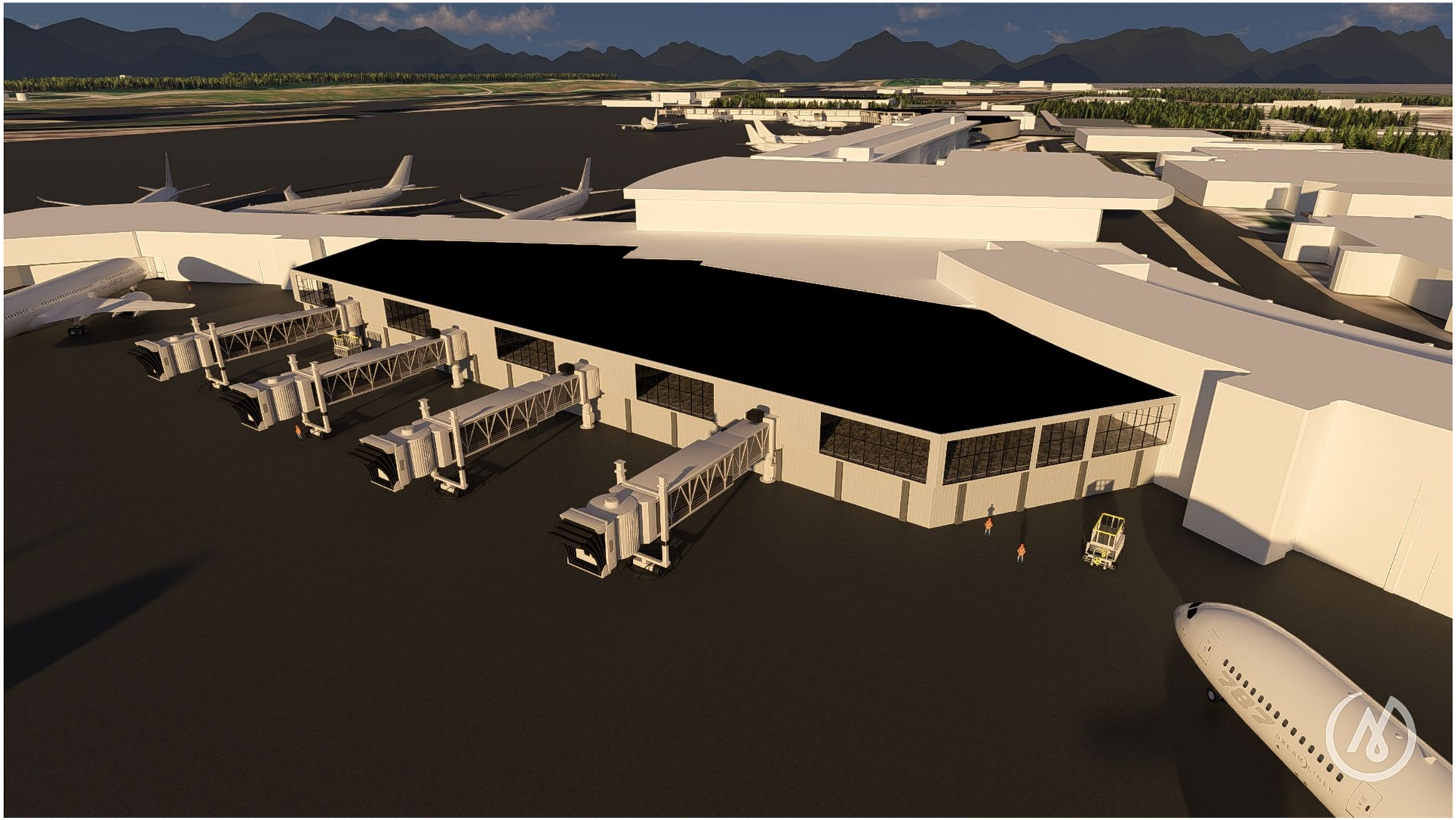


LEGEND

- Airline
- Airport Operations / Administration
- Circulation
- Concessions
- Holdrooms
- Inbound Baggage
- MEP
- Other (Vacant, Storage, Misc.)
- Outbound Baggage
- Restrooms
- Security Screening Checkpoint

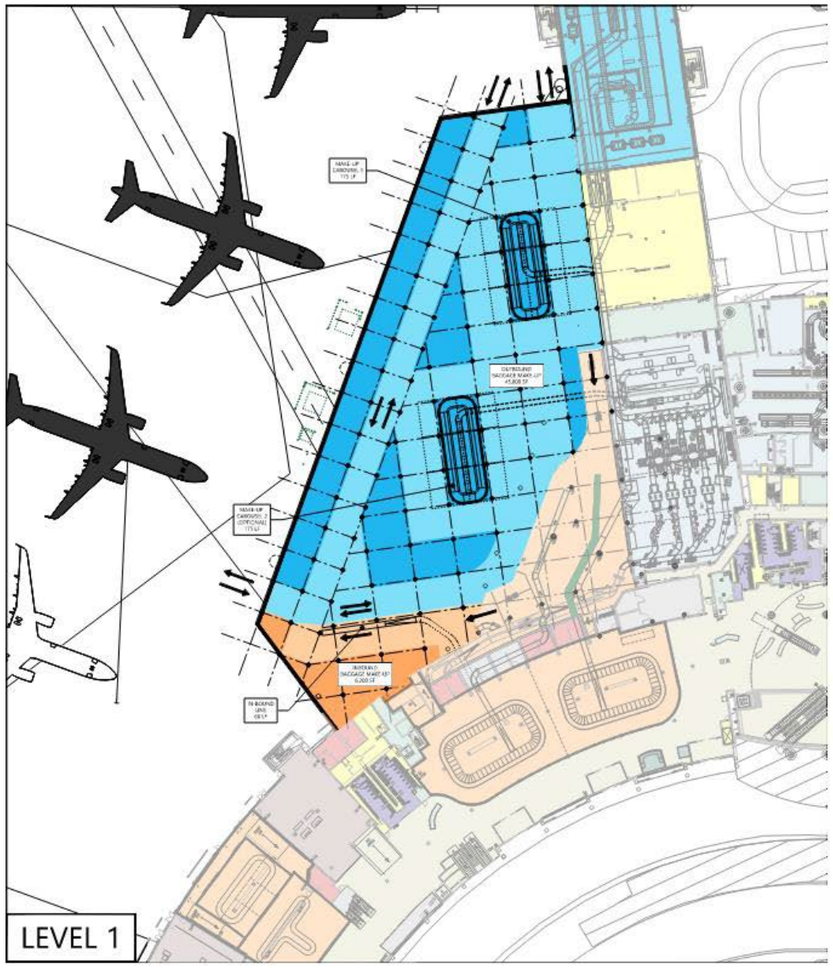
Source: RS&H, 2024

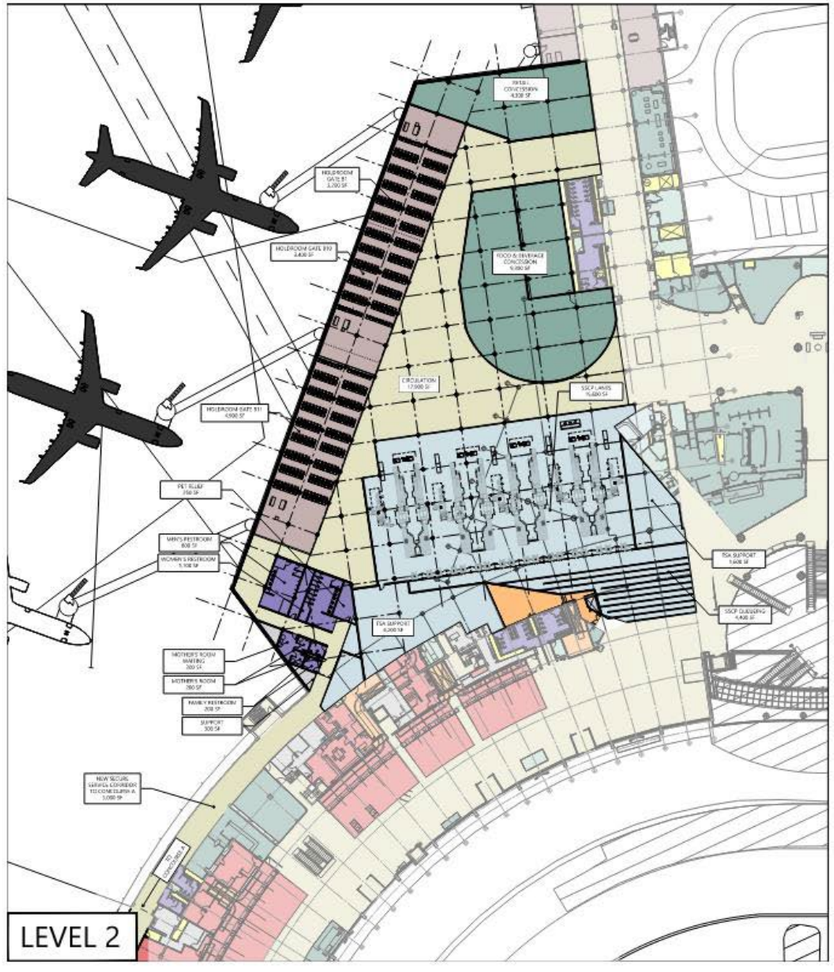
Figure 5-51
Preferred Terminal Alternative – B Concourse Expansion Rendering



Source: MCG Explore Design, 2025.

Figure 5-52
Preferred Terminal Alternative – B Concourse Expansion Floorplan



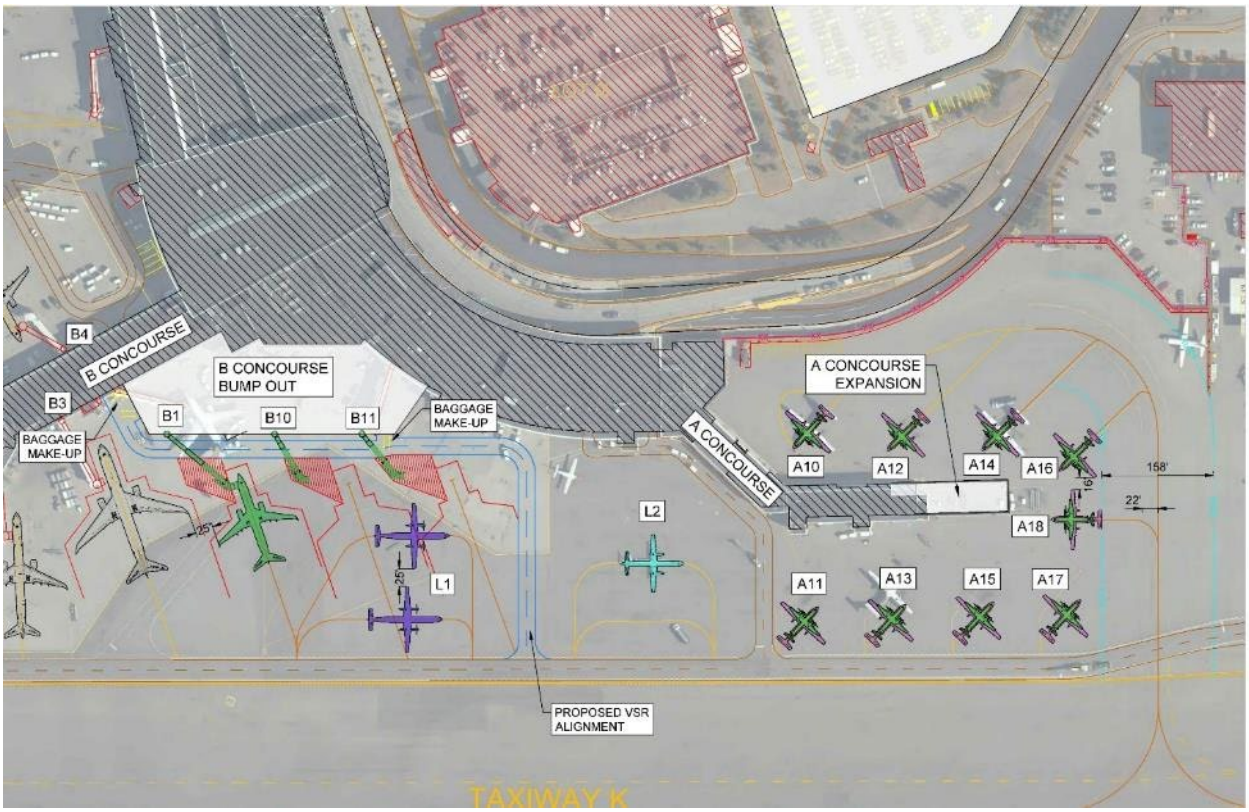


LEGEND

- Airline
- Airport Operations / Administration
- Circulation
- Concessions
- Holdrooms
- Inbound Baggage
- MEP
- Other (Vacant, Storage, Misc.)
- Outbound Baggage
- Restrooms
- Security Screening Checkpoint

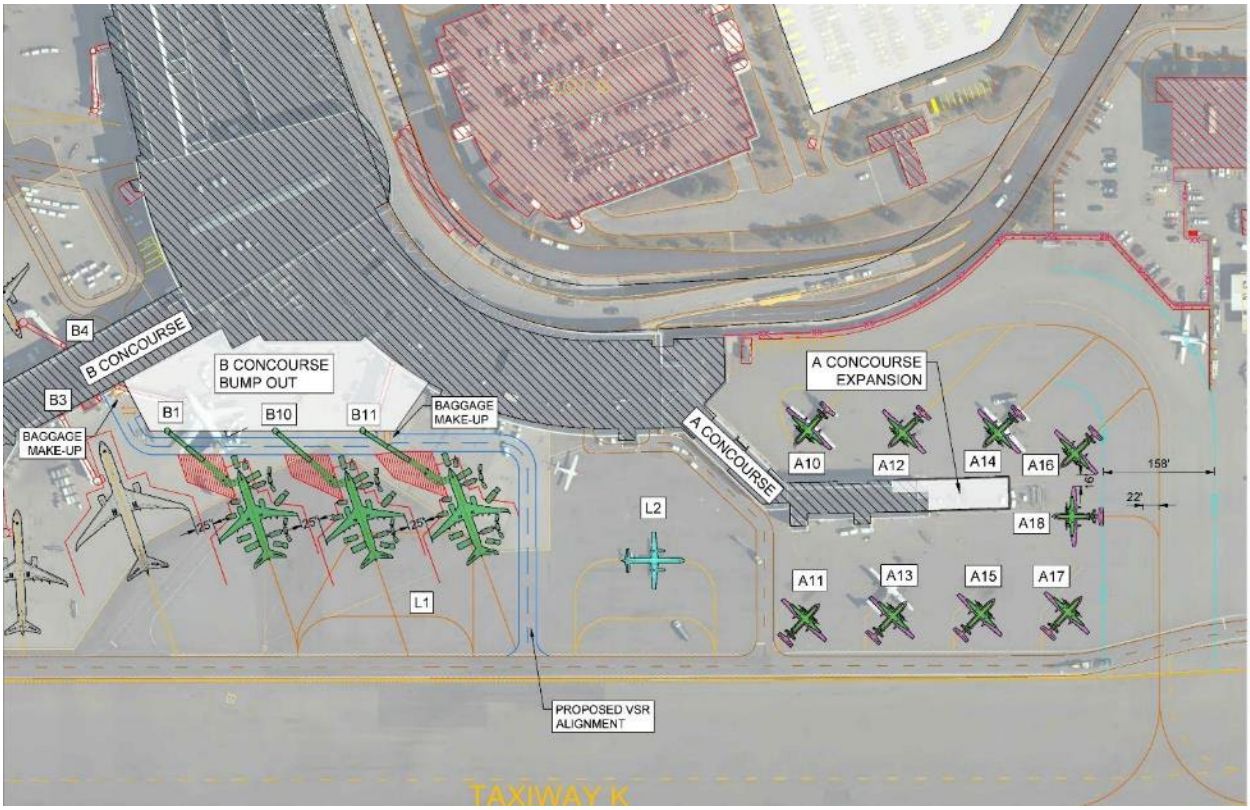
Source: RS&H, 2024

Figure 5-53
Preferred Terminal Alternative – Conceptual Daytime Apron Usage



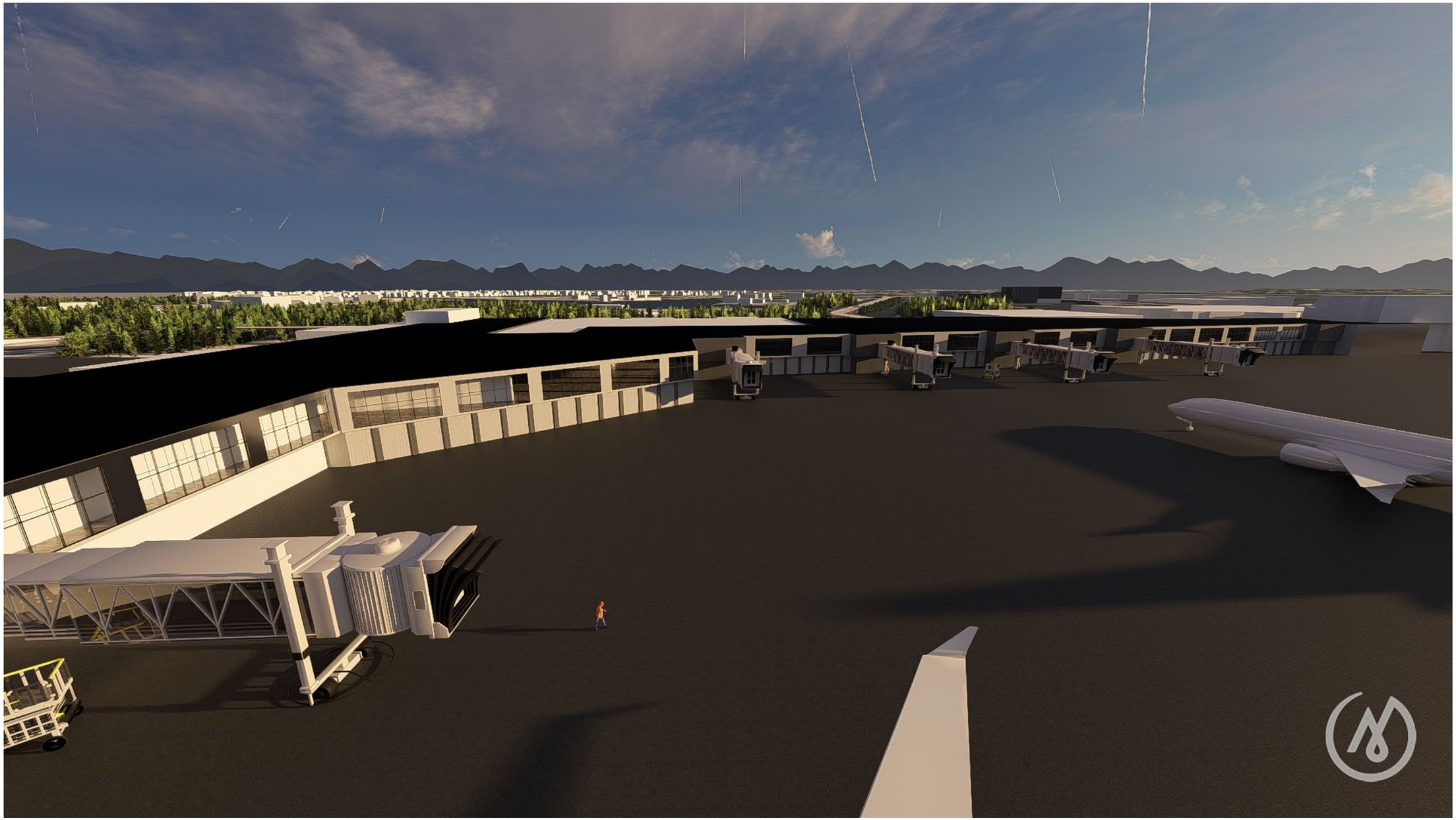
Source: RS&H, 2024

Figure 5-54
Preferred Terminal Alternative – Conceptual Nighttime Apron Usage



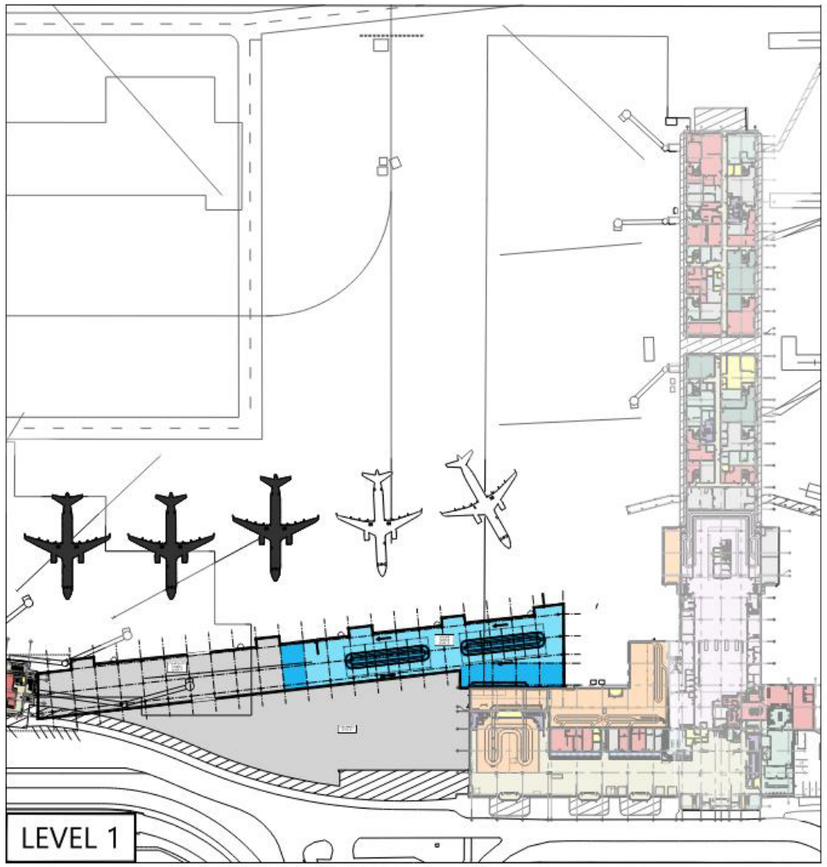
Source: RS&H, 2024

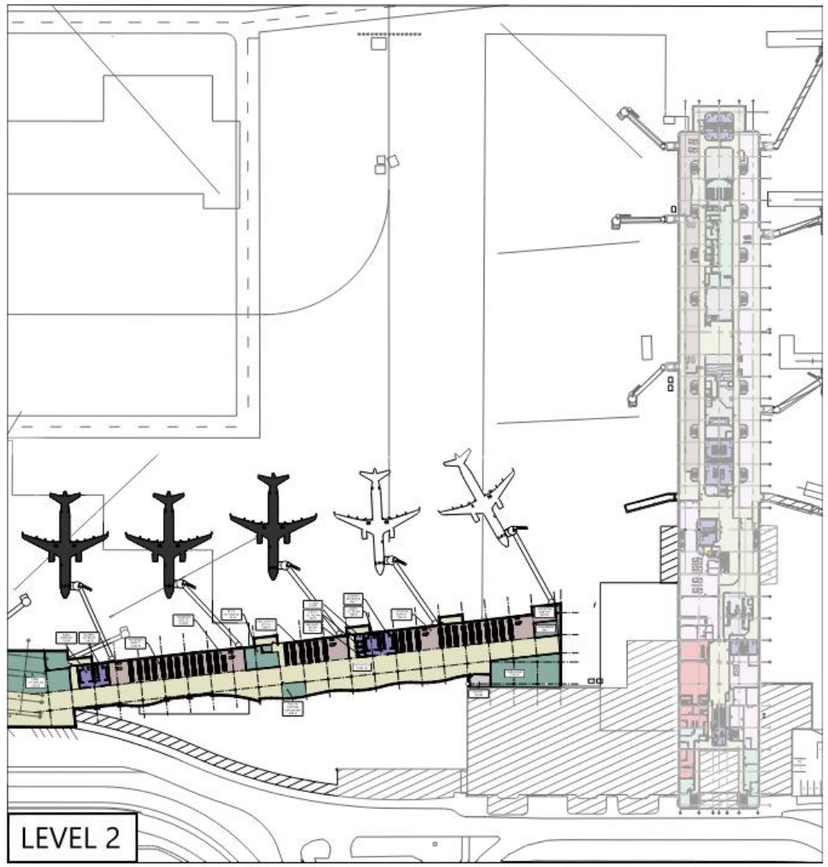
Figure 5-55
Preferred Terminal Alternative – C Concourse Expansion Rendering



Source: MCG Explore Design, 2025.

Figure 5-56
Preferred Terminal Alternative – C Concourse Expansion Floorplan





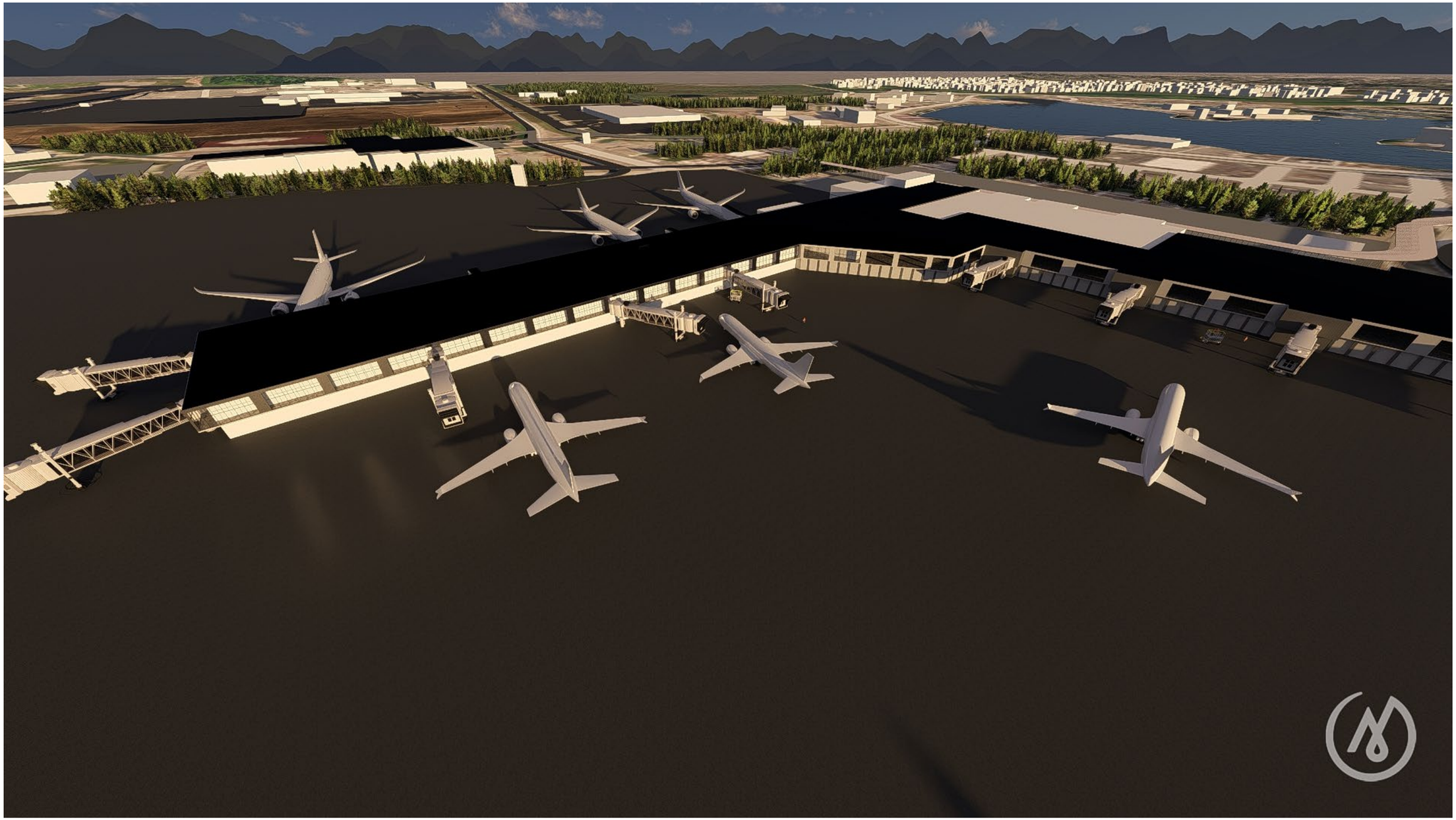
LEGEND

- Airline
- Airport Operations / Administration
- Circulation
- Concessions
- Holdrooms
- Inbound Baggage
- MEP
- Other (Vacant, Storage, Misc.)
- Outbound Baggage
- Restrooms
- Security Screening Checkpoint

64' 32' 0' 64'

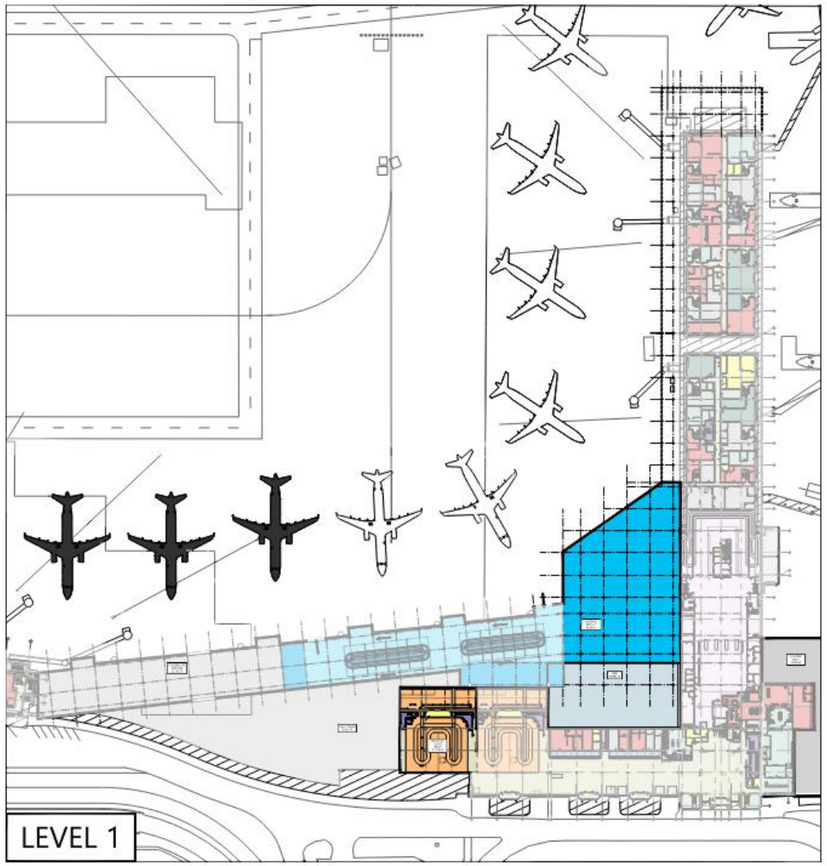
Source: RS&H, 2024

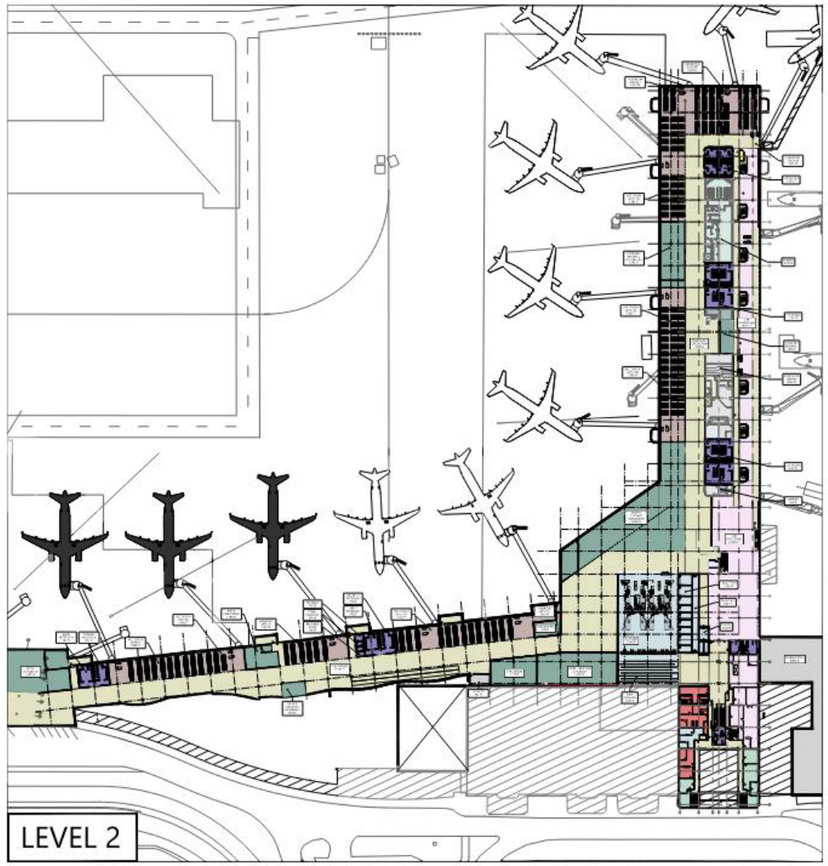
Figure 5-57
Preferred Terminal Alternative – North Terminal Expansion Rendering

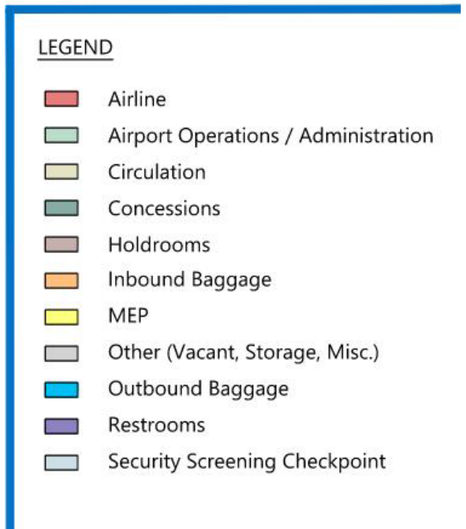


Source: MCG Explore Design, 2025.

Figure 5-58
Preferred Terminal Alternative – North Terminal Expansion Floorplan







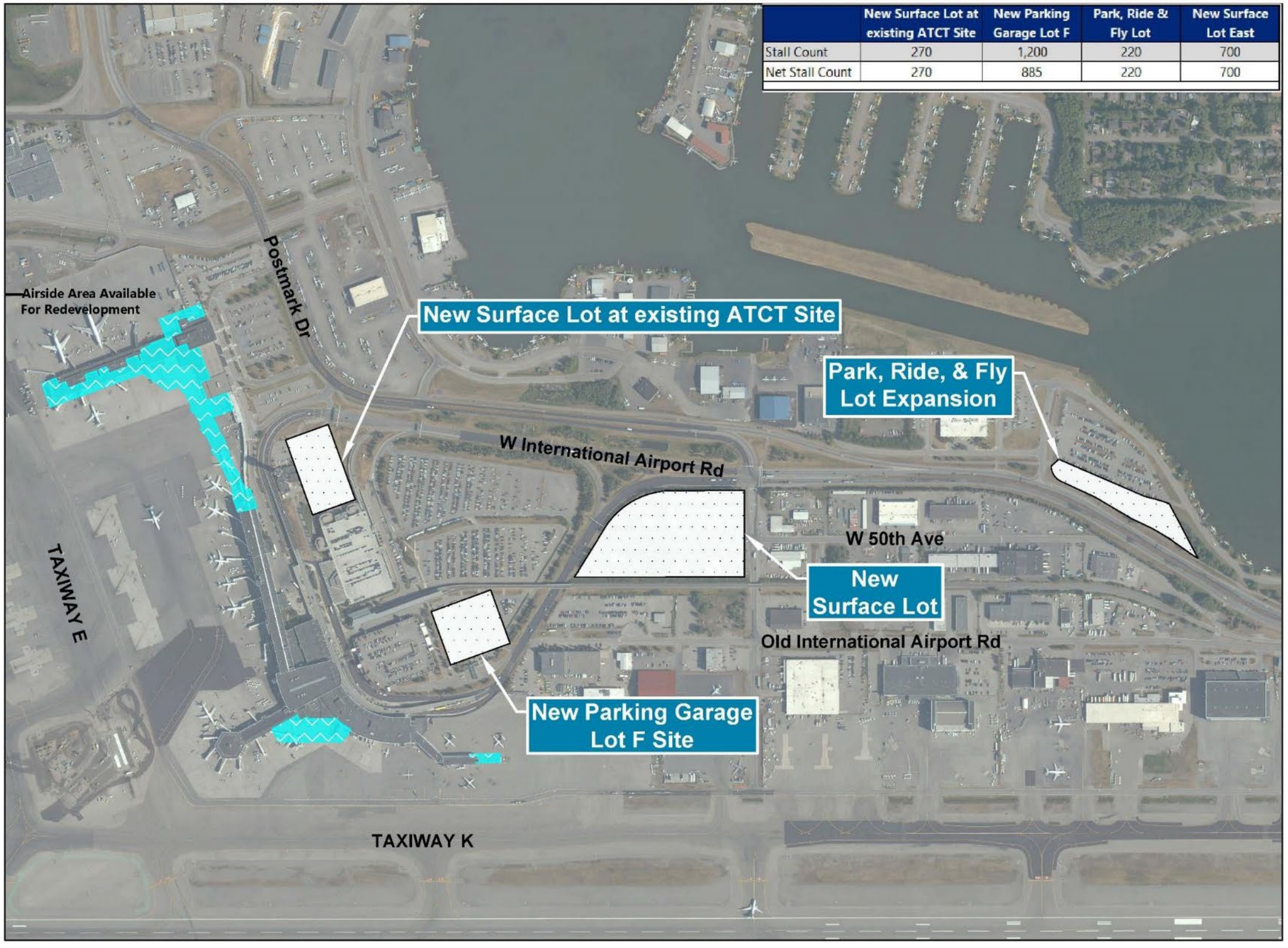
Source: RS&H, 2024

5.6.3 Landside

The Preferred Landside Alternative aims to enhance ground transportation efficiency and capacity at ANC to manage current and future passenger volumes effectively. It focuses on repurposing and expanding existing landside vehicle parking areas to meet future demands with minimal impact on current infrastructure, making it the most feasible option. The Preferred Landside Alternative is depicted in **Figure 5-59.**

This alternative proposes two potential parking garage locations: one at the existing ATCT site and another at the existing Lot F site. A new surface parking lot is proposed for the northwest portion of the East Airpark. The alternative also proposes expanding the existing Park, Ride, & Fly Lot to the south. These developments and expansions are planned to meet the vehicle parking requirements.

Figure 5-59
Preferred Landside Alternative


Airside Area Available For Redevelopment
Postmark Dr
New Surface Lot at existing ATCT Site
Park, Ride, & Fly Lot Expansion
W International Airport Rd
W 50th Ave
New Surface Lot
Old International Airport Rd
New Parking Garage Lot F Site
TAXIWAY E
TAXIWAY K

	New Surface Lot at existing ATCT Site	New Parking Garage Lot F	Park, Ride & Fly Lot	New Surface Lot East
Stall Count	270	1,200	220	700
Net Stall Count	270	885	220	700

LEGEND

New Terminal Development

New Landside Development

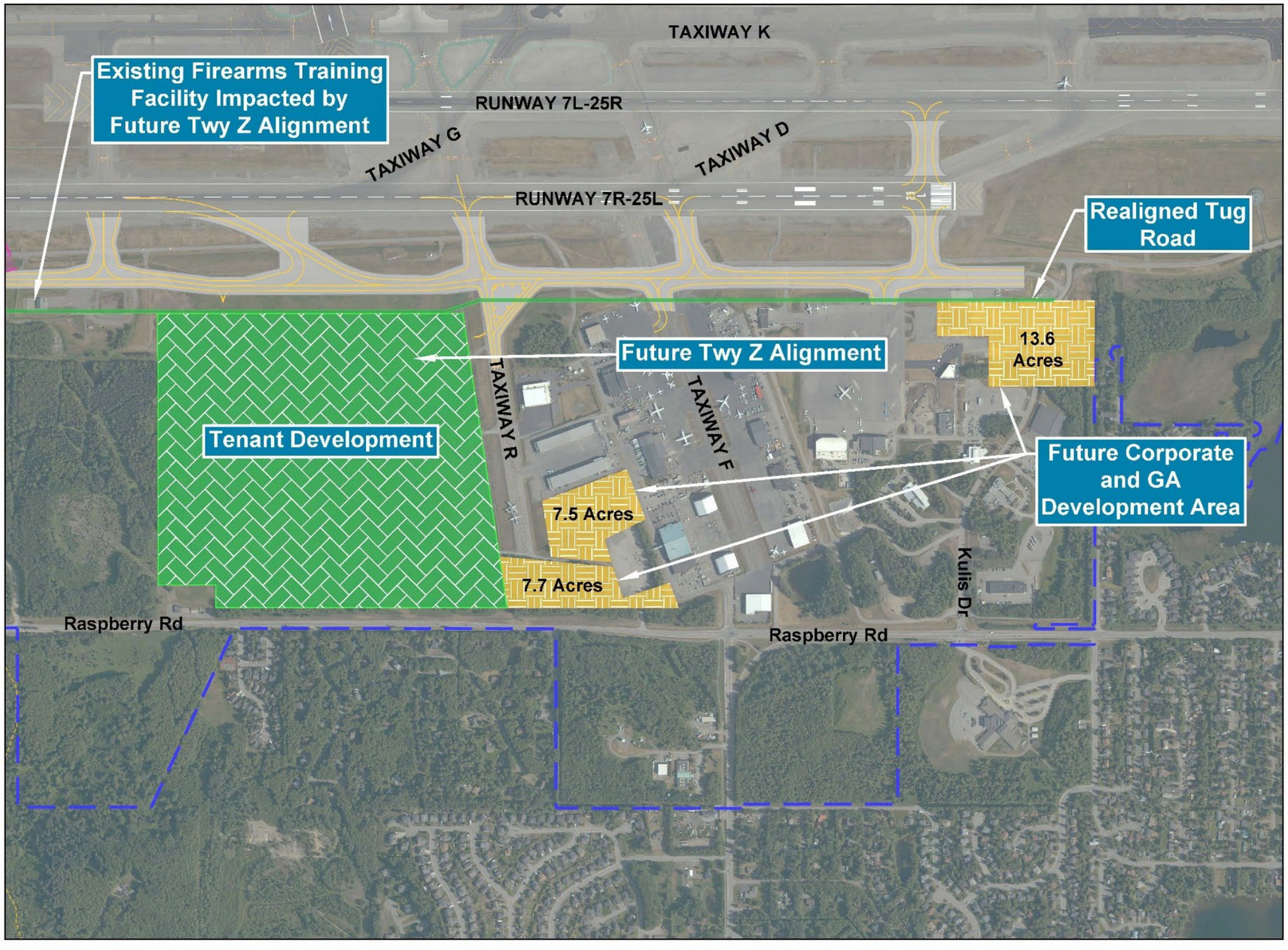
Source: RS&H, 2024

5.6.4 Support Facilities

The Preferred Support Facilities Alternative focuses on expanding corporate and GA development in the South Airpark. It designates a new area south of Taxiway Z near the threshold of Runway 25L, encompassing approximately 13.6 acres. Additionally, it establishes two new GA development zones: one encompassing approximately 7.7 acres south of the north-south segment of Taxiway Z, and another encompassing approximately 7.5 acres east of this segment. The South Airpark Preferred Support Facilities Alternative is depicted in **Figure 5-60.**

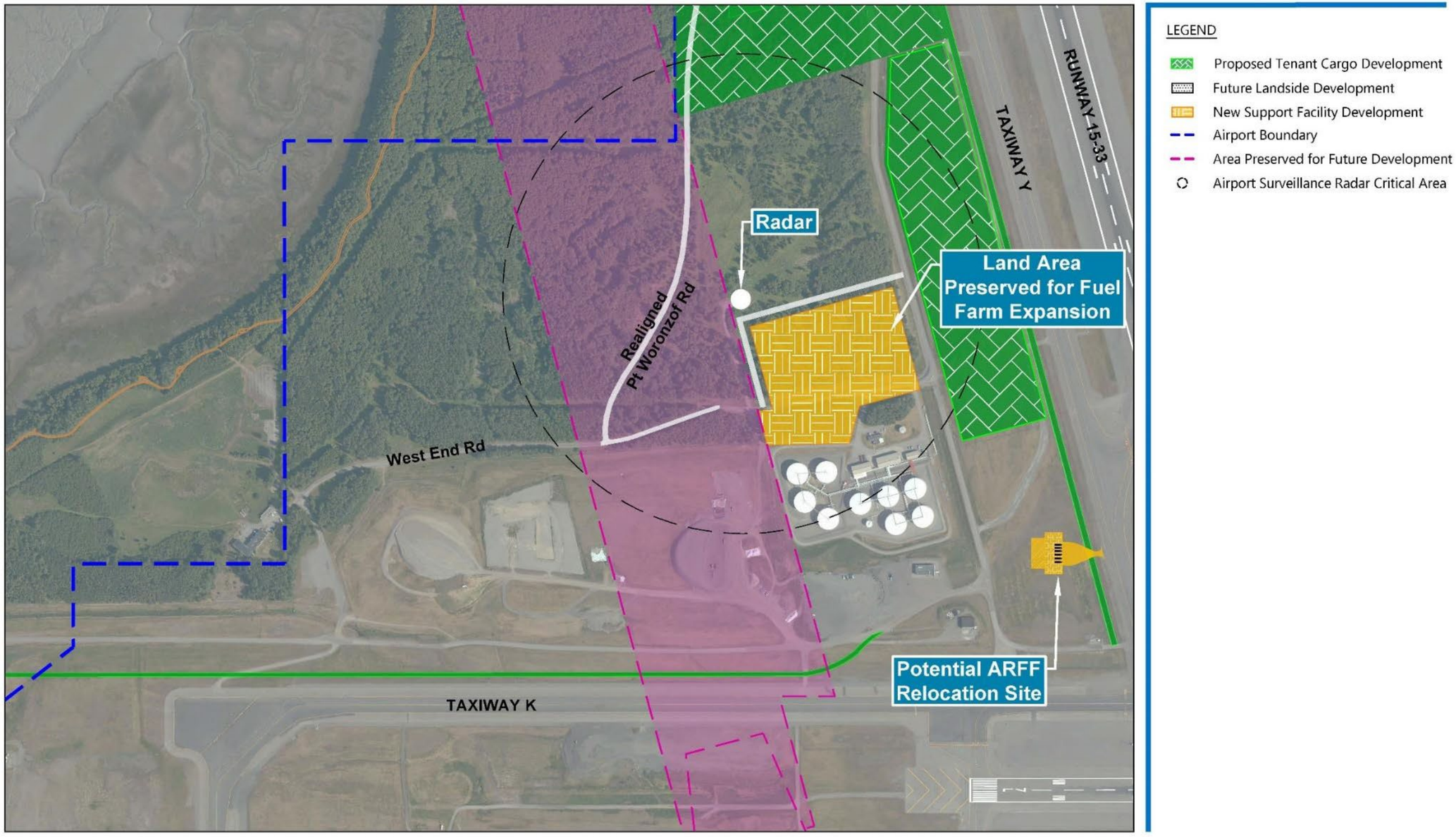
The Preferred Support Facilities Alternative focuses on upgrading the ARFF Facility and expanding the fuel farm in the West Airpark. The alternative proposes a new ARFF station north of Taxiway K and east of the fuel farm. This location provides efficient access to the existing runways and the potential future runway. Additionally, the alternative allocates land to expand the fuel farm by approximately 16.2 acres to the north of the current site. The West Airpark Preferred Support Facilities Alternative is depicted in **Figure 5-61.**

Figure 5-60
Preferred Support Facilities Alternative – South Airpark



Source: RS&H, 2024

Figure 5-61
Preferred Support Facilities Alternative – West Airpark



Source: RS&H, 2024

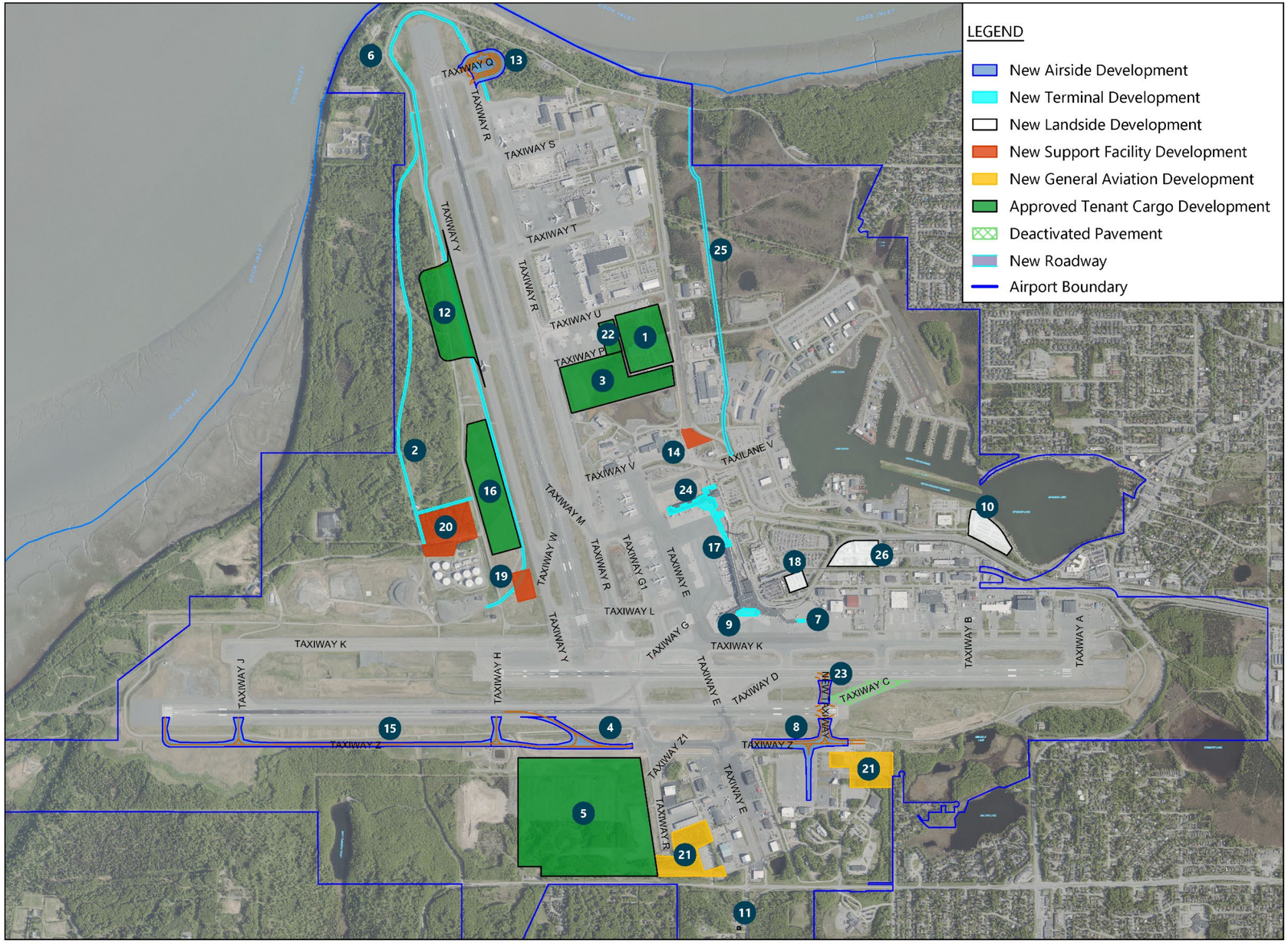
5.7 Project Phasing Plan and Costs

The Phasing Plan organizes Preferred Alternative projects into four timeframes that are established by the PALs established earlier. PAL 1 through PAL 3 represent the "Future" timeframe. Future projects are projects that are proposed projects within the 20-year planning horizon that are recommended for implementation. An additional PAL is introduced, PAL 4, that represents the "Ultimate" timeframe. Ultimate projects are projects that are outside of the 20-year planning horizon but are still recommended for consideration and implementation. Projects are ordered in relation to facility requirement need and general funding capacity for airport driven projects. Tenant driven projects have been allocated by information available to the project team at the time of drafting, and are subject to change. The Phasing Plan and Ultimate timeframe projects will be described in further detail in **Chapter 6, Capital Program and Financial Feasibility**. **Figure 5-62** depicts the Project Phasing Plan for Future projects. **Figure 5-63** depicts the Project Phasing Plan for Ultimate projects. **Table 5-4** presents a summary of the Project Phasing Plan including rough-order magnitude cost estimates.

The cost estimates for each project are ROM calculations and include estimates of environmental entitlement costs (NEPA), design and related costs (i.e., compliance and permitting), and construction. The ROM costs utilize estimated areas and unit cost factors and are escalated from 2024 dollars to last year of the PAL within which they are anticipated to be implemented. The cost escalations utilized sources availability from the Municipality of Anchorage and State of Alaska [1]. Projects to be implemented by tenants do not have cost estimates listed, as the Airport is not responsible for tenant-funded projects. ROM estimates are valuable in the early planning stages to gauge the scale of funding needs and identify shortfalls to implementing the proposed projects. As projects progress through environmental documentation and design, more detailed and accurate cost estimates will be developed to refine the budgeting and funding requirements.

[1] *State of Alaska Escalation Cost Study*, April 2023

Figure 5-62
Preferred Alternative Project Phasing Plan (Future)

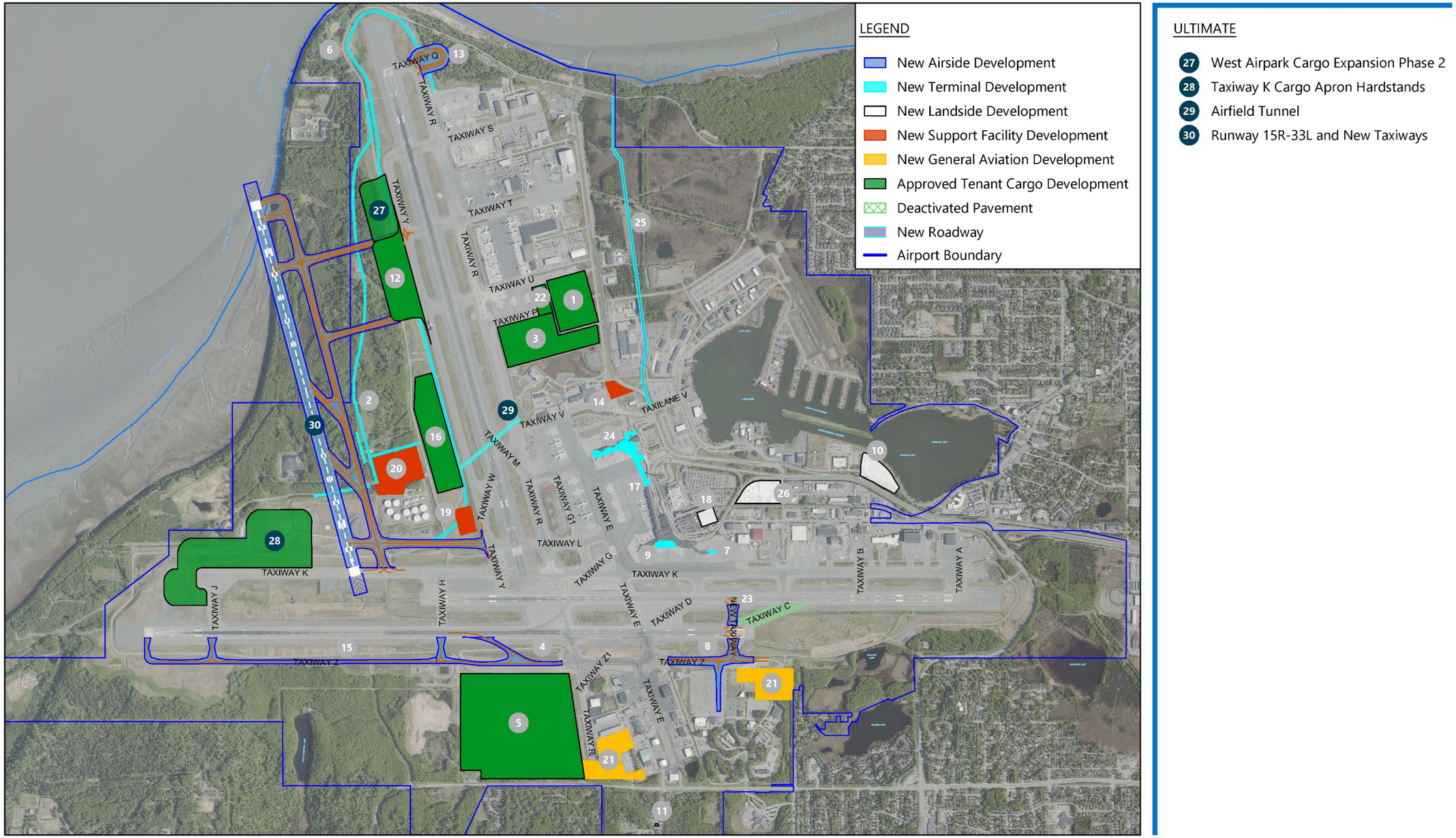


FUTURE

1. FedEx Buildout
2. Realigned Point Woronzof Road / West End Road
3. ACCS Buildout
4. Taxiway Z West Extension Phase 1 (Twy R to Twy H)
5. NorthLink Buildout
6. North End Tug Road Extension
7. A Concourse Expansion
8. Taxiway Z East (Twy E to Rwy 25L End)
9. B Concourse Expansion
10. Park, Ride, and Fly Lot Expansion
11. USFWS Buildout
12. West Airpark Cargo Expansion Phase 1
13. North Hold Pad
14. New ATCT
15. Taxiway Z West Extension Phase 2 (Twy H to Rwy 7R End)
16. Anchorage Airport Partners Buildout
17. C Concourse Expansion
18. New Parking Garage at Lot F
19. Relocated ARFF Station
20. Fuel Farm Expansion
21. South Airpark Infill and Eastward Expansion for GA
22. P4 Aircraft Hardstand and Taxilane P Extension
23. New Connector Taxiway from Runway 25L End to Runway 7L-25R
24. North Terminal Expansion
25. Logistics Drive
26. New Parking Lot in East Airpark

Source: RS&H, 2025.

Figure 5-63
Preferred Alternative Project Phasing Plan (Ultimate)



Source: RS&H, 2025.

Table 5-4
Preliminary Phasing Plan and Costs

Project #	Name	Functional Area	PAL	Future/ Ultimate	Enabling Project(s)	PAL 1 Total Project Cost in 2027 Dollars	PAL 2 Total Project Cost in 2032 Dollars	PAL 3 Total Project Cost in 2042 Dollars	PAL 4 Total Project Cost in 2050 Dollars
1	FedEx Buildout	Airside	PAL 1	Future	n/a	Cost borne by tenant(s)	-	-	-
2	Realigned Point Woronzof Road / West End Road	Landside	PAL 1	Future	n/a	$26,000,000	-	-	-
3	ACCS Buildout	Airside	PAL 1	Future	n/a	Cost borne by tenant(s)	-	-	-
4	Taxiway Z West Extension Phase 1 (Taxiway R to Taxiway H)	Airside	PAL 1	Future	n/a	$53,000,000	-	-	-
5	NorthLink Buildout	Airside	PAL 1	Future	4	Cost borne by tenant(s)	-	-	-
6	North End Tug Road Extension	Airside	PAL 1	Future	2	$13,000,000	-	-	-
7	A Concourse Expansion	Terminal	PAL 1	Future	n/a	$23,000,000	-	-	-
8	Taxiway Z East (Taxiway E to Runway 25L end)	Airside	PAL 1	Future	n/a	$112,000,000	-	-	-
9	B Concourse Expansion	Terminal	PAL 1	Future	n/a	$228,000,000	-	-	-
10	Park, Ride, and Fly Lot Expansion	Landside	PAL 1	Future	n/a	$3,000,000	-	-	-
11	USFWS Buildout	Support	PAL 1	Future	n/a	Cost borne by tenant(s)	-	-	-
12	West Airpark Cargo Expansion Phase 1	Airside	PAL 2	Future	2, 6	-	$196,000,000	-	-
13	North Hold Pad	Airside	PAL 2	Future	n/a	-	$25,000,000	-	-
14	New ATCT	Support	PAL 2	Future	n/a	-	Cost borne by tenant(s)	-	-
15	Taxiway Z West Extension Phase 2 (Taxiway H to Runway 7R end)	Airside	PAL 2	Future	5	-	$79,000,000	-	-
16	Anchorage Airport Partners Buildout	Airside	PAL 2	Future	2, 6	-	Cost borne by tenant(s)	-	-
17	C Concourse Expansion	Terminal	PAL 2	Future	n/a	-	$308,000,000	-	-
18	New Parking Garage at Lot F	Landside	PAL 2	Future	n/a	-	$220,000,000	-	-
19	Relocated ARFF Station	Support	PAL 2	Future	n/a	-	$210,000,000	-	-
20	Fuel Farm Expansion	Support	PAL 2	Future	n/a	-	Cost borne by tenant(s)	-	-
21	South Airpark Infill and Eastward Expansion for GA Development	Support	PAL 2	Future	n/a	-	Cost borne by tenant(s)	-	-
22	P4 Aircraft Hardstand and Taxilane P Extension	Airside	PAL 3	Future	n/a	-	-	$37,000,000	-
23	New Connector Taxiway from Runway 25L End to Runway 7L-25R	Airside	PAL 3	Future	n/a	-	-	$39,000,000	-
24	North Terminal Expansion	Terminal	PAL 3	Future	17	-	-	$642,000,000	-
25	Logistics Drive	Landside	PAL 3	Future	n/a	-	-	$30,000,000	-
26	New Parking Lot in East Airpark	Landside	PAL 3	Future	n/a	-	-	$41,000,000	-
27	West Airpark Cargo Expansion Phase 2	Airside	PAL 4	Ultimate	2, 6, 12	-	-	-	$295,000,000
28	Taxiway K Cargo Apron Hardstands	Airside	PAL 4	Ultimate	2, 6	-	-	-	$807,000,000
29	Airfield Tunnel	Airside	PAL 4	Ultimate	n/a	-	-	-	$301,000,000
30	Runway 15R-33L and New Taxiways	Airside	PAL 4	Ultimate	n/a	-	-	-	$2,394,000,000

Source: HDR, 2025; Estimations Inc., 2024; MCG Explore Design, 2024; RS&H, 2025.